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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

JANUARY 1960
Volume 11 No. 1

ASHEVILLE: 1960

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 1 JANUARY 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

Temperatures for January averaged near normal in the contiguous United States. There were the usual temperature fluctuations, but few unusual extremes. Precipitation totals, within 25 percent of normal in most of the country, were much above normal in South Carolina, northern Georgia, and a belt extending from southwestern Michigan through the central Great Plains into the Far Southwest where it fanned out along the Mexican Border from western Texas to the Pacific coast. Areas with less than 50 percent of normal included mainly southern Florida, southeastern Texas, and eastern Wyoming and adjacent areas. Snowfall was heavy from Arizona and New Mexico to the Great Lakes, but much below normal in the western mountains outside of New Mexico and Arizona. Storm damage was less than usual, and flood damage was not extensive.

TEMPERATURE.--Temperatures for the month averaged slightly above normal along the Pacific coast, in parts of the northern Great Plains, the Ohio and upper Mississippi Valleys, and the Northeast, and slightly below normal elsewhere. Extreme temperatures were well within the limits of former records for January.

Cold polar air covered the Far West during the first week and freezing occurred along much of the Pacific coast and extended into northern Mexico. On the 2d and 3d freezing damaged some fruit and vegetables in the area around Yuma, Ariz., where lows of 30° were recorded, and low temperatures in the 20's damaged some young trees in the avocado and citrus areas of California. At the same time cold arctic air over the North Central Interior depressed temperatures to their lowest levels of the month in that area where some extreme lows of -30° or lower were recorded. January 9 to 14 was the coldest period of the month in the Northeast, and extreme lows of -30° or lower were recorded in New York and New England.

The most extensive and prolonged cold period of the month occurred from about the 18th to 24th when a ridge of high pressure covered most of the North American Continent. For the week ending the 25th temperatures averaged below normal everywhere, except in New York, New England, the upper Great Lakes, and along the Pacific coast. Weekly averages ranged from 12° to 15° below normal over most of the northwestern interior, the midcontinent areas, and much of the Southeast. Subzero minima extended down through the western Great Plains to northern Texas, and subfreezing to the Florida Everglades where extensive crop damage was reported.

Most of the Nation had two or more abnormally mild periods of a few days duration with daily averages 10° or more above normal.

PRECIPITATION.--Most of the month's heavy precipitation in the belt extending from the Far Southwest to the Great Lakes fell about midmonth during the passage of a series of major storms. Rains of 1 to 2 inches in eastern Iowa, southern Wisconsin and northern Illinois on the 12th and 13th and again on the 14th and 15th produced moderate to heavy flooding in several streams in that region. Record monthly totals for January in this region were reported by several stations among which were Des Moines and Dubuque, Iowa, 4.38 and 6.04 inches respectively. Record 24-hour falls for January were also reported from several stations including 1.61 inches at Sioux Falls, S. Dak., on the 1st and 2d; 2.86 inches at Chicago, Ill., and 3.75 inches at Dubuque, Iowa, both on the 11th and 12th.

In the Carolinas and northern portions of Georgia and Alabama, moderate to heavy rains fell during frontal passages on the 2d and 3d, 5th and 6th, 17th and 18th, and 27th. Heaviest amounts, however, fell in the area during a storm on the 29th and 30th when totals at a number of stations exceeded 4 inches and produced flooding along several streams. A monthly total of 10.16 inches was the greatest at Atlanta, Ga., for January since 1936, and 8.48 inches was the greatest amount at Augusta, Ga., for January since 1925.

SNOWFALL.--Snowfall from the Far Southwest to the Great Lakes was both frequent and heavy. During the first storm, January 1 to 3, falls up to 10 or 12 inches were measured in southeastern South Dakota, and of 2 to 8 inches over Minnesota, northwestern Iowa, and northeastern Nebraska.

On the 5th and 6th another storm moving from the northern Gulf of Mexico across the Southern States produced heavy snow in a belt extending from the Texas Panhandle to the Virginias. A fall of 11.6 inches at Little Rock, Ark., was the heaviest there for January since 1918, and accumulations ranged up to 9 inches in Tennessee, 7 inches in northern Mississippi, southwestern Virginia, and the High Plains of Texas. On the 10th and 11th, 2 to 4 inches of snow fell over southern New England, producing hazardous driving conditions; and on the 11th and 12th up to 8 inches fell in northern New York.

During the week ending the 18th heavy snow fell from the lower Rocky Mountains to the Great Lakes. Record depths of more than 3 feet were reported in the White Mountains of Arizona on the 17th. Snowfall of 4 to 6 inches was general from the Texas Panhandle to Wisconsin, and falls ranged up to 12 inches in Iowa and 10 inches in Kansas. Drifting snow and glaze closed roads and schools over a wide area. Late in the week heavy snowfall extended from the Great Lakes into New England, with 5- to 8-inch falls rather general.

A coastal storm on the 19th produced 8 to 16 inches of snow in central and southern Maine, and 3 to 8 inches in southeastern New Hampshire and northeastern Massachusetts. On the 24th some light snow and sleet were reported in southern portions of Louisiana and Mississippi. A northeastern coastal storm on January 28 and 29 produced 6 to 12 inches of new snow in northern New England, 3 to 6 inches in central and western Massachusetts and northern Connecticut, and up to 6 inches in northern New York State.

DESTRUCTIVE STORMS.--A northeastern storm with winds up to 80 mph in eastern Massachusetts on January 2 and 3, injured 2 persons, broke windows

GENERAL SUMMARY OF WEATHER CONDITIONS—Continued

JANUARY 1960

and blew down signs and trees in many areas. Wind and snow in north-central Kansas knocked out telephone service in several towns on the 14th and 15th. In New England on the 16th, northwest winds with gusts up to 60 mph caused widespread, mostly minor damage and injured 4 persons. Severe thunderstorms and some tornadoes occurred in eastern Oklahoma and northeastern Texas on the 14th.

CONDENSED CLIMATOLOGICAL SUMMARY

JANUARY 1960

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Frisco City	84	15	Waterloo	5	23	Opelika	9.73	Enterprise	2.43
Arizona	Anvil Ranch	79	30	2 Stations	-25	18+	Pinal Ranch	6.12	Buffalo Ranch	.14
Arkansas	2 Stations	78	15+	do	6	20+	Huttig Dam	6.32	Berryville 4NW	1.01
California	El Centro 2SSW	83	26	Boca	-27	13	Honeydew 2WSW	20.67	Calexico 2NE Twentynine Palms	.09
Colorado	Two Buttes 1NW	69	12	Taylor Park	-39	3	Wolf Creek Pass 4W	6.00	Bond	.10
Connecticut	Danbury	57	3	Coventry	-7	14	Prospect	4.12	Bridgeport WB AP	2.26
Delaware	Milford	63	3	Georgetown 5SW	15	24	Wilmington Porter Resvr.	3.38	2 Stations	2.24
Florida	2 Stations	89	17+	Woodruff Dam	16	22	Milton Exp. Station	5.96	Dania 4WNW	.00
Georgia	Alapaha Exp. Sta.	85	13	Blairsville Exp. Sta.	2	23	Atlanta Bolton	10.52	Brunswick	1.40
Idaho	Buhl	56	8	Idaho Falls 42NW WB	-43	19	2 Stations	3.58	Chilly Barton Flat	.10
Illinois	Elizabethtown	71	13+	Freeport	-7	21	Galena	7.29	Chandlerville	.74
Indiana	4 Stations	70	13+	Wheatfield	-5	24	La Porte	4.68	Kendallville	1.11
Iowa	Keosauqua	61	12	Le Mars 2N	-25	5	Dubuque WB Airport	6.04	Mason City FAA AP	.08
Kansas	Independence	72	12	McDonald	-12	19	Blue Rapids	3.51	Cedar Bluff Dam	.59
Kentucky	3 Stations	73	14+	2 Stations	4	23	Flemingsburg	5.04	London FAA AP	1.58
Louisiana	Donaldsonville	83	13	Minden	12	24	Slidell	9.73	Franklin 2N	2.35
Maine	2 Stations	50	3	Cupsuptic Storehouse	-35	10	Bangor Dow Field	4.92	Jackman	1.87
Maryland	Cumberland	66	13	Oakland 1SE	-6	25	Sines Deep Creek	5.03	Hancock Fruit Lab.	2.10
Massachusetts	Sandwich	58	3	Birch Hill Dam	-6	2	Peru	4.83	Salem CG Air Station	2.05
Michigan	Benton Harbor AP	58	12	2 Stations	-22	27+	Niles	5.43	Atlanta 3ENE	1.07
Minnesota	Itasca State Pk. Sch.	46	30	Hoyt Lakes 5N	-36	4	Litchfield	1.71	Bricelyn	.10
Mississippi	2 Stations	81	14+	Ripley	9	23	Pearlington 2NNE	8.94	Clarksdale	3.16
Missouri	Ozark Beach	72	11	Tarkio	-11	23	2 Stations	4.56	Grovesprings	.52
Montana	4 Stations	60	29	3 Stations	-40	20+	Summit	3.64	Biddle	.00
Nebraska	Mullen	64	30	Creighton	-28	5	Hastings	3.23	Valentine WB Airport	.04
Nevada	Mesquite	70	31	Mountain City RS	-33	18	Mt Rose Highway Sta.	6.14	Mina	T
New Hampshire	3 Stations	52	3	First Conn Lake	-33	10	York Pond	4.08	Monroe 5NNE	1.71
New Jersey	Pemberton 3E	62	27	Layton 3NW	5	24	Greenwood Lake	4.34	Canton	2.18
New Mexico	2 Stations	74	26+	Gavilan	-37	18	Mountain Park	4.80	Engle	T
New York	Glenham	56	3	Chazy 3E	-27	10	Pulaski	6.84	Canandaigua 3S	1.27
North Carolina	Moncure 3SE	77	14	Celo 2S	1	25	Haywood Gap	9.86	Tungsten Mines	2.47
North Dakota	Medora 3NNE	53	30	Medora 3NNE	-35	5	Bisbee	1.43	2 Stations	.12
Ohio	Chilo Dam 34	69	12	2 Stations	2	23+	Chardon	4.38	Montpelier	1.74
Oklahoma	Lake Overholser	77	13	do	-6	20+	Flashman Tower	4.32	Beaver	.41
Oregon	Lookout Point Dam	68	30	Seneca	-31	18	Valsetz	13.13	La Grande 15WSW	.32
Pennsylvania	2 Stations	64	15+	Coudersport 3NW	-11	25	Blairsville 6ENE	5.08	Newport	1.50
Puerto Rico	do	93	1	2 Stations	52	21+	Rio Blanco Upper	7.42	Melania	.00
Rhode Island	Providence WB AP	56	3	Kingston	4	2	Block Island WB AP	4.28	Kingston	2.67
South Carolina	2 Stations	79	14+	2 Stations	7	23	Saluda	10.71	Waterboro	3.31
South Dakota	Fort Meade	66	29	do	-32	5	Sioux Falls WB AP	1.65	Farmingdale 2N	.04
Tennessee	3 Stations	78	14+	do	6	24+	Elora	5.83	Lock C Cumberland Rv.	2.14
Texas	Rio Grande City 2ESE	91	13	Dalhart FAA Airport	-9	19	Overton	6.69	Kingsville	.15
Utah	St. George PH	65	28	Scofield Dam	-37	18	Alta	5.68	Cisco	.10
Vermont	2 Stations	48	9+	Newport	-30	10	Manchester Center	4.78	Burlington WB AP	1.24
Virginia	Farmville	78	13	Burkes Garden	-1	24	Suffolk Lake Kilby	5.11	Allisonia	1.11
Washington	2 Stations	65	31+	Chewelah 2S	-21	19	Aberdeen 20NNE	18.70	Odessa	.21
West Virginia	4 Stations	68	15+	Hopemont	-8	25	Kumbrabow State Forest	7.03	Harpers Ferry Nat Monmt.	1.19
Wisconsin	Beloit	52	12	Couderay	-30	4	Racine	5.14	Alma Dam 4	.31
Wyoming	Metz Ranch	66	29	Bondurant 3NW	-44	19	Moran	2.74	Lysite	.00

+ And also on an earlier date or dates.

Note: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.		#		°F.	%	In.	In.	In			In.	In.	M p. h.		M p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	995.2	1021.2	53	37	44.7	-0.5	73	14	13	23	0	10	38	79	5.05	0.07	1.86	13	0	T	0	10.9	N	38	NE	29	5	8	18	7.5	35
Huntsville	605	997.6	1021.5	50	35	42.1	----	74	13	14	23	0	13	--	--	6.18	----	1.41	13	1	0.5	T	8.3	SE	*22	NNW	30	2	9	20	7.9	--
Mobile	211	1018.9	1021.2	59	40	49.4	-3.3	76	13+	22	23	0	7	41	76	7.92	2.90	2.76	13	5	T	T	12.1	N	*35	SW	14	5	10	16	6.9	--
Montgomery	198	1012.8	1021.2	56	38	47.4	-1.8	76	14	18	23	0	9	38	76	6.50	1.90	2.20	14	3	T	0	9.0	NW	47	SW	14	6	7	18	7.1	49
ALASKA																																
Anchorage	90	1001.7	1006.6	24	10	17.0	4.0	47	4	-23	13+	0	31	13	82	.72	-.04	.22	9	0	14.2	32	6.1	NNE	*24	SSE	4	5	6	20	7.3	33
Annette	110	1007.1	1011.1	40	32	36.0	1.4	51	30	25	26	0	18	31	83	18.29	8.89	4.01	20	0	15.6	4	12.8	SE	*58	SSE	30	4	6	21	7.8	—
Barrow	22	1021.7	1022.1	-19	-31	-24.8	-9.7	3	7	-45	14	0	31	-34	61	.14	-.02	.06	8	0	1.4	12	9.5	E	*28	E	4	4	1	2	----	--
Barter Island	39	1018.6	1020.4	-22	-32	-27.3	-11.8	-4	7	-45	16+	0	31	-36	63	.25	-.14	.09	7	0	2.5	12	12.1	E	*52	WNW	19	4	3	8	----	--
Bethel	125	1001.4	1002.7	15	-1	7.0	.2	39	26+	-33	13	0	30	0	72	.82	-.08	.19	18	0	10.2	17	15.2	NNE	*41	S	7	6	2	23	8.0	—
Cold Bay	90	993.2	997.2	36	28	32.0	2.9	46	7	11	19	0	21	28	85	3.75	1.23	.80	21	0	11.6	7	15.6	SSE	*53	ESE	1	1	3	27	8.9	--
Cordova	40	1003.7	1005.8	31	16	23.4	-1.6	45	4	-8	15	0	28	21	88	7.97	.92	2.20	17	0	9.7	6	3.5	ESE	*23	ENE	31+	5	3	23	7.7	--
Fairbanks	436	992.9	1010.8	6	-14	-3.8	6.0	36	4	-51	13	0	31	-10	73	.97	-.02	.44	9	0	23.6	36	4.0	NNE	*17	WSW	7	6	3	22	7.4	--
Juneau	17	1008.8	1009.6	33	23	27.8	1.6	43	31+	9	11	0	26	26	92	3.86	-.62	.84	18	0	26.6	8	6.9	ESE	*37	ESE	30	3	2	26	8.6	17
King Salmon	44	1000.3	1002.3	30	17	23.6	9.5	43	3	-19	13	0	26	20	83	1.74	.69	.62	10	0	3.3	4	11.4	N	*38	N	12	2	3	26	8.8	--
Kotzebue	10	1010.5	1010.6	2	-12	-5.0	1.6	29	5+	-40	16	0	31	-11	78	.58	.11	.12	13	0	6.7	11	11.5	E	*41	E	1	11	4	16	6.1	--
McGrath	334	995.3	1008.6	[illegible]	-10	-2.0	6.7	28	8+	-55	15	0	31	-8	74	2.09	.95	.48	19	0	39.0	37	2.6	ESE	*15	NNW	19+	5	2	24	8.0	--
Nome	13	1006.1	1006.3	14	-3	5.5	-.1	34	24+	-35	16	0	31	-1	75	1.76	.51	.45	14	0	18.2	31	12.8	E	*46	NE	28	7	6	18	7.0	23
Shemya	122	986.1	989.8	35	28	31.3	----	42	18	19	11	0	30	27	81	2.98	----	.44	26	0	24.3	6	24.1	E	*62	SE	18+	1	11	19	7.9	--
St. Paul Island	22	993.6	1002.7	32	23	27.8	1.4	41	7	-1	31	0	27	24	85	1.70	-.12	.25	21	0	5.3	3	----	---	--	---	--	0	5	26	8.8	--
Yakutat	28	1006.1	1007.2	34	20	26.5	.0	45	30	4	16	0	27	24	88	10.94	-.66	3.10	17	1	51.0	47	6.4	ENE	*41	ESE	31	1	5	25	8.6	--
ARIZONA																																
Flagstaff	6993	------	------	37	[illegible]	22.7	-2.6	50	30+	-12	2	0	31	--	--	1.03	-.66	.74	4	0	14.4	14	----	---	--	---	--	11	7	13	5.3	--
Phoenix	1109	979.0	1019.2	59	38	48.5	-1.2	74	29	29	4	0	8	35	63	.85	.25	.50	4	0	.0	0	5.8	NE	*21	SSE	12	13	7	11	4.9	94
Prescott	5014	847.6	1021.0	43	18	30.8	-4.5	57	29+	0	2	0	29	22	74	.90	-.20	.73	4	0	9.0	7	6.8	SSW	26	S	12+	14	6	11	4.7	81
Tucson	2584	927.9	1017.9	59	35	46.8	-2.9	73	30+	24	18+	0	13	30	58	2.01	1.38	1.08	6	0	1.3	T	8.6	SE	36	SE	29	16	5	10	4.4	79
Winslow	4880	853.4	1022.7	39	16	27.9	-4.8	57	10	-1	21	0	29	18	68	.64	.27	.29	4	0	6.8	3	7.5	SE	*29	S	12	13	5	13	5.0	--
Yuma	199	1014.2	1019.5	66	40	53.0	-2.3	78	24	30	3+	0	4	30	47	.74	.41	.44	3	0	.0	0	7.3	N	26	SE	12+	16	6	9	4.3	86
ARKANSAS																																
Fort Smith	458	1004.1	1021.7	49	30	39.5	-.5	74	11	17	21+	0	22	32	77	2.42	-.47	.77	6	0	5.5	5	9.0	ENE	41	W	14	8	5	18	6.9	41
Little Rock	257	1007.8	1021.5	48	34	41.1	-.7	75	13	21	23+	0	15	33	76	4.21	-.91	1.28	13	0	11.6	7	6.6	SW	21	WSW	14	5	7	19	7.5	34
Texarkana	361	------	1021.3	52	36	44.0	-1.9	73	11	19	24	0	14	--	--	5.64	.52	2.54	11	4	.2	T	7.1	WNW	--	---	--	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	1002.4	1020.8	59	39	48.9	2.0	76	24	25	4+	0	[illegible]	36	65	1.42	.40	.72	6	1	.0	0	5.3	ENE	*35	NNW	10	7	9	15	6.2	--
Bishop	4108	875.4	1019.3	49	18	33.2	-4.7	63	30	1	2	0	30	--	—	.18	-.94	.07	5	0	1.0	1	----	---	--	---	--	8	10	13	6.1	--
Blue Canyon	5280	837.8	1018.3	39	27	33.1	-3.1	57	30	9	13	0	23	--	--	14.77	5.60	2.84	15	0	63.7	35	9.4	SSE	42	SSE	21	5	4	22	7.9	--
Burbank	699	992.9	1019.5	62	41	51.3	-1.3	77	29	29	2	0	2	34	58	2.67	.32	.99	8	0	T	T	3.9	NNW	*30	NE	4	10	10	11	5.5	--
Eureka (U)	43	1015.6	1018.0	55	42	48.5	1.3	65	29+	30	1	0	6	--	--	3.87	-2.33	.91	19	0	.0	0	6.5	☆ S	33	SW	29+	3	3	25	8.5	32
Fresno	331	1007.8	1020.1	58	36	46.9	2.2	73	29	23	2	0	12	37	74	2.08	.51	.80	9	1	T	0	5.7	SE	24	SW	14	9	7	15	6.4	74
Long Beach	34	1019.0	1020.1	63	43	52.9	----	80	29	34	1	0	0	40	66	2.14	----	.84	8	2	.0	0	5.4	WNW	*23	ENE	14	11	8	12	5.2	--
Los Angeles (U)	312	------	------	63	47	54.6	-.4	78	29	38	3+	0	0	40	62	2.94	.56	1.32	7	2	.0	0	7.0	☆ W	33	E	14	12	11	8	5.0	75
Los Angeles	99	1015.9	1019.6	62	45	53.3	.1	79	29	36	5+	0	0	40	64	2.83	.82	.93	6	1	.0	0	8.2	E	*24	ENE	14	10	9	12	5.4	--
Mt. Shasta (U)	3544	892.7	1019.3	39	27	33.1	.3	50	30	9	13	0	21	--	--	6.32	1.78	1.78	19	0	25.8	8	----	---	--	---	—	2	5	24	8.4	--
Oakland	3	1019.6	1019.8	55	42	48.7	1.5	63	29	29	2	0	2	42	78	3.42	.12	.85	10	0	.0	0	6.7	SE	*25	SSE	21	7	4	20	7.1	--
Point Arguello	367	1005.8	1019.3	58	40	49.0	----	69	29	24	2	0	4	--	--	3.18	----	1.21	11	0	.0	0	7.9	---	*37	SSE	9	9	7	15	6.2	--
Red Bluff	341	1007.1	1020.1	51	37	44.0	-1.1	62	30	22	2	0	12	35	74	4.63	.90	1.25	14	0	.4	T	10.2	NNW	35	SE	8	5	2	24	8.0	39
Sacramento	17	1019.0	1019.9	54	39	46.4	2.1	63	28+	26	2	0	8	39	77	3.43	.77	.89	14	0	.0	0	7.5	NNW	36	S	21	7	5	19	7.1	46
Sandberg (R)	4517	863.2	1019.6	41	31	36.3	-3.5	57	30	17	4	0	17	--	--	2.18	-.12	1.51	8	0	6.3	4	15.1	N	*58	S	9	11	8	12	5.5	--
San Diego	19	1015.9	1019.2	64	46	54.9	.0	79	29	38	3+	0	0	42	63	2.99	1.30	1.23	9	0	.0	0	5.4	NE	26	S	12	15	10	6	4.1	68
San Francisco (U)	52	------	------	56	47	51.0	.9	63	29	39	3+	0	0	--	--	4.04	.01	1.09	12	1	.0	0	6.8	☆ SE	29	SE	21	--	--	--	----	45
San Francisco	[illegible]	1019.3	1019.8	56	43	49.2	1.3	64	29	29	2	0	1	43	79	4.49	1.02	1.14	12	1	.0	0	8.3	S	36	WNW	11	8	3	20	7.1	--
Santa Maria	238	1011.2	1025.6	60	39	49.3	-1.1	71	29	21	2	0	8	40	74	3.17	.46	1.39	8	0	.0	0	6.3	WNW	*29	SE	20	11	5	15	5.6	--
COLORADO																																
Alamosa	7536	769.4	1026.2	28	-10	9.4	-7.5	45	9	-32	20	0	31	--	--	.33	.10	.22	4	0	9.8	8	----	---	--	---	--	13	8	10	5.1	--
Colorado Springs	6173	808.3	1020.0	42	14	28.0	-.8	66	30	-4	19	0	31	9	50	.11	-.11	.11	2	0	1.5	1	10.7	NE	*39	NNW	14	12	7	12	5.0	--
Denver	5292	836.1	1019.6	40	15	27.6	-1.1	61	9+	-7	19	0	31	11	54	.77	.27	.41	5	0	10.7	6	10.1	SSW	35	W	6	12	[illegible]	11	5.2	77
Grand Junction	4849	861.5	1023.7	35	19	26.6	2.6	45	28+	4	4	0	31	18	70	.33	-.27	.11	9	0	2.3	1	6.2	ESE	25	NW	1	5	6	20	7.5	60
Pueblo	4639	855.7	1020.3	39	[illegible]	23.4	-6.0	64	9	-17	19	0	31	12	65	.66	.28	.44	4	0	13.5	13	6.9	W	49	N	14	12	10	9	5.0	87
CONNECTICUT																																
Bridgeport	7	1016.0	------	37	26	31.4	2.2	53	3	13	12	0	28	--	--	2.26	-1.17	.76	10	0	4.8	4	----	---	--	---	--	8	6	17	----	--
Hartford	169	1010.9	1017.6	35	17	26.0	-1.0	52	3	-2	14	0	30	17	70	3.08	-.07	1.15	10	0	13.4	7	7.7	N	34	NW	16	5	10	16	6.6	62
New Haven	6	1016.9	------	38	24	30.9	1.8	53	3	8	12	0	28	--	--	2.41	-1.48	.86	11	0	5.4	4	9.5	---	38	S	3	8	6	17	6.4	52
DELAWARE																																
Wilmington	78	1015.0	1018.5	42	28	35.1	1.8	58	3	18	25	0	24	26	73	2.86	-.70	.80	9	0	.2	T	9.3	WNW	*35	N	19	6	7	18	6.6	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	44	32	38.2	1.7	60	10	20	22	0	13	--	--	2.96	-.45	.95	10	--	----	--	----	---	--	---	--	--	--	--	----	--
Wash. Nat'l. AP	14	1014.7	1019.3	44	32	38.2	2.0	57	10	20	22	0	13	27	68	2.66	-.58	.95	11	0	T	0	9.9	WNW	40	WNW	19+	7	6	18	7.1	46
FLORIDA																																
Apalachicola (U)	13	1018.9	-----	61	46	53.3	-1.9	75	15	27	23	0	4	--	--	2.03	-1.58	.96	9	0	.0	0	7.9	---	48	E	1	5	10	16	6.5	57
Daytona Beach	31	1018.0	1020.9	69	47	57.8	-1.7	83	6	28	23	0	4	48	76	1.16	-.94	1.00	2	1	.0	0	7.8	NW	*21	NNE	7	12	8	11	5.2	--
Fort Myers	15	1019.6	------	74	52	63.1	-1.5	84	5+	32	24	0	1	--	--	.46	-1.06	.46	2	0	.0	0	7.7	---	*22	SW	30	12	13	6	4.3	--
Jacksonville	24	1019.2	1020.7	66	44	55.2	-.7	79	15+	25	24+	0	6	45	74	2.07	-.61	1.22	9	0	.0	0	7.8	NW	28	W	6	9	9	13	6.0	57
Key West	4	1018.7	------	75	65	70.0	-.8	85	18+	50	24	0	0	--	--	.03	-1.51	.02	2	0	.0	0	10.5	---	28	N	21	13	14	4	4.2	74
Lakeland (U)	214	------	------	71	51	60.8	-1.2	82	6+	32	23	0	1	--	--	1.24	-.92	.99	5	0	.0	0	7.0	---	--	---	--	13	11	7	4.6	78
Miami	7	1018.5	1019.9	75	58	66.7	-1.6	85	7	34	22	0	0	56	73	.19	-1.87	.12	4	0	.0	0	6.6	NNW	*23	WSW	30	13	15	3	3.9	--
Miami Beach	9	------	------	75	63	68.9	-1.1	81	18+	38	22	0	0	--	--	.19	-1.85	.10	4	0	.0	0	----	---	¢31	W	30	17	12	2	3.2	76
Orlando	106	1016.1	1020.9	72	49	60.5	-1.4	83	6	30	23	0	3	49	71	1.49	-.56	1.17	4	1	.0	0	9.0	NW	*23	WNW	31+	11	12	8	4.9	--
Pensacola (U)	13	------	------	59	43	51.0	-3.0	73	14+	25	23	0	5	--	--	4.37	-.18	1.88	14	1	T	0	†10.8	---	*34	SE	1	--	--	--	----	50
Tallahassee	64	1017.8	1020.6	62	42	52.0	-1.6	79	14	24	22	0	6	43	76	2.77	-1.08	1.00	11	0	.0	0	6.1	NNW	*23	NW	3	4	8	19	7.1	--
Tampa	19	1019.2	1020.9	70	50	60.3	-1.2	81	5	30	24	0	2	50	74	1.32	-.67	.90	6	0	.0	0	8.2	N	*30	NW	1	10	12	9	5.3	73
West Palm Beach	15	1019.1	1020.3	75	56	65.7	-1.3	87	18	36	22	0	0	54	72	.22	-2.26	.22	1	0	.0	0	9.2	NW	*24	NW	21	10	18	3	4.6	--
GEORGIA																																
Athens	798	990.7	1020.7	52	34	43.2	-1.5	72	11	11	23	0	13	35	76	9.74	4.46	1.77	12	1	T	T	9.2	WNW	*23	NE	30+	8	8	15	6.3	--
Atlanta	975	977.8	1020.8	52	37	44.2	-.4	72	11	14	23	0	9	35	74	10.16	5.49	2.05	15	1	T	0	11.2	WNW	*32	ESE	18	7	6	18	6.9	46
Augusta	143	1013.2	1020.3	56	36	45.7	-1.7	75	13	16	23	0	11	38	77	8.48	5.02	3.61	14	[illegible]	.0	0	6.3	WNW	*30	WSW	15	8	7	16	6.6	--
Columbus	385	1006.3	------	57	37	47.0	-.4	75	14	15	23	0	10	--	--	6.37	1.79	2.06	12	2	.0	0	8.4	---	*25	NW	19+	[illegible]	9	16	6.7	--
Macon	356	1006.6	1020.6	57	38	47.8	-1.7	77	11	15	23	0	10	37	72	5.00	.99	.95	13	1	.0	0	8.9	WNW	31	W	18	11	3	17	6.2	55
Rome	637	996.1	------	51	33	42.2	-.5	73	13+	13	25	0	14	--	--	6.35	.80	1.47	15	0	T	0	5.1	---	--	---	--	6	12	13	6.3	--
Savannah	48	1017.7	1020.5	60	39	49.6	-2.0	78	13	19	24+	0	8	41	76	3.13	.68	1.19	12	0	.0	0	8.7	WNW	27	SW	15	10	5	16	6.1	54
Thomasville	283	------	------	62	42	52.1	-2.1	80	14	20	23	0	6	--	--	2.64	-1.37	.84	11	0	.0	0	----	---	--	---	--	--	--	--	----	--
HAWAII																																
Hilo	31	1015.6	1016.9	77	62	69.1	-1.3	83	27	58	23+	0	0	61	78	25.95	11.82	7.15	16	1	.0	0	7.4	WSW	*21	E	12	2	7	22	8.1	25
Honolulu	7	1016.9	1017.4	80	66	72.8	.6	83	29+	58	22+	0	0	62	71	.48	-4.17	.22	13	0	.0	0	11.0	ENE	34	NE	16+	8	18	5	5.3	60

See footnotes at end of table.

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F	°F	°F.	°F.	°F		°F				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
HAWAII (Cont'd.)																																
Lihue	115	1011.9	1016.9	79	65	71.8	1.7	84	31	57	22	0	0	63	76	0.97	-5.26	0.24	15	1	0.0	0	11.6	NE	32	E	9	9	15	7	5.3	72
IDAHO																																
Boise	2842	923.5	1024.0	33	15	24.0	-3.3	47	31+	-4	18	0	29	18	78	1.33	.00	.35	16	0	11.5	5	6.5	SE	26	SE	11	4	4	23	8.2	46
Idaho Falls 46W (R)	4933	849.6	1026.1	23	-1	11.1	-4.6	40	8	-32	19	0	31	--	--	.66	.00	.32	9	0	8.8	11	3.7	NNE	a29	SSW	8	--	--	--	----	--
Idaho Falls 42NW (R)	4790	------	------	22	-5	8.7	-3.6	39	24	-43	19	0	31	--	--	.51	-.02	.19	9	--	----	--	2.5	WSW	a21	NNW	1	--	--	--	----	--
Lewiston	1413	969.2	1022.8	33	20	26.5	-4.3	53	29	-2	19	0	28	--	--	.79	-.26	.29	13	0	11.5	6	----	---	--	---	--	2	6	23	8.2	--
Pocatello	4444	864.5	1024.6	28	10	19.0	-3.0	42	8	-22	18	0	31	15	83	.98	-.23	.26	15	0	15.2	9	9.6	NE	36	S	8	1	6	24	8.7	31
ILLINOIS																																
Cairo (U)	314	1007.5	------	44	33	38.3	.9	68	12	14	23	0	15	--	--	2.95	-1.53	.93	10	0	3.0	2	9.4	SW	28	S	12	4	8	19	7.6	38
Chicago (O'Hare)	656	993.2	1018.7	33	21	26.8	----	58	12	5	23	0	28	21	80	3.07	----	2.00	11	0	3.5	2	12.6	SW	*30	SW	6	3	7	21	7.9	--
Chicago (Midway)	610	995.3	1018.9	34	22	28.1	3.2	58	12	6	23	0	27	22	79	3.73	1.89	2.86	10	0	3.5	2	13.4	WNW	31	W	5	4	8	19	7.5	38
Moline	589	997.0	1020.1	32	19	25.7	2.5	59	12	-3	23	0	28	20	79	2.43	1.93	2.07	10	1	8.5	6	10.6	WNW	31	NE	14	5	8	18	7.2	54
Peoria	654	997.0	1020.1	34	20	26.9	1.9	59	12	-2	23	0	28	20	76	1.93	-.04	1.15	10	0	3.3	2	11.4	WNW	29	NW	3	7	5	19	7.1	40
Rockford	728	990.9	1019.3	31	18	24.1	.4	55	12	0	23	0	28	19	81	4.66	2.72	2.89	12	0	9.1	7	10.0	WNW	*27	NE	14	6	6	19	7.3	--
Springfield	589	996.3	1020.3	37	23	30.0	2.6	62	12	-1	23	0	26	25	81	1.31	-.72	.52	11	1	3.4	3	12.6	W	33	W	3	6	6	19	7.4	37
INDIANA																																
Evansville	383	1004.1	1020.4	44	30	36.5	1.8	69	12	14	22	0	22	30	77	1.89	-2.04	1.10	7	0	.5	T	10.5	NW	33	NW	2	0	10	21	8.4	33
Fort Wayne	801	986.8	1019.2	35	22	28.3	2.0	59	12	6	21	0	25	24	81	2.46	-.08	1.22	10	0	1.1	1	11.3	W	35	W	19	2	6	23	8.1	44
Indianapolis	793	988.5	1019.7	39	25	31.8	3.0	66	12	7	22	0	22	24	73	2.35	-.80	.89	9	0	T	T	9.6	WNW	29	NW	18+	4	8	19	7.7	45
South Bend	768	989.2	1018.4	33	22	27.3	2.7	57	12	7	4	0	27	23	83	4.23	2.23	2.81	18	0	12.4	8	12.0	SW	*26	SW	2	1	5	25	8.7	--
IOWA																																
Burlington	694	993.6	1020.3	34	18	26.0	2.0	60	12	-5	23	0	28	20	78	2.56	.82	1.04	9	0	9.5	8	11.6	NW	32	NW	18	7	6	18	6.9	51
Des Moines	948	988.5	1021.3	29	14	21.2	-.9	48	12	-8	23	0	29	16	83	4.38	3.15	2.97	8	1	11.2	10	11.7	WNW	47	NE	14	8	6	17	6.7	51
Dubuque	1065	993.6	1020.0	27	14	20.5	1.1	48	12	-9	21	0	29	15	79	6.04	4.67	3.75	11	1	16.8	13	----	---	--	---	--	8	6	17	6.8	--
Sioux City	1094	979.0	1021.3	26	10	17.6	-1.5	40	7	-17	5	0	31	12	77	1.57	.83	.88	6	0	14.9	11	10.9	NW	35	NW	2	8	5	18	6.7	57
Waterloo	870	------	------	28	11	19.6	.9	45	12	-14	24	0	29	--	84	2.04	.88	1.18	9	0	10.6	9	9.9	---	--	---	--	--	--	--	----	--
KANSAS																																
Concordia (U)	1375	968.8	------	32	18	24.7	-3.4	53	12	0	22	0	29	--	79	1.83	1.24	.97	9	0	10.1	8	7.1	NW	30	SW	1	12	4	15	5.6	56
Dodge City	2594	930.2	1020.4	38	20	28.8	-1.5	58	9	0	19	0	29	22	81	1.16	.67	.72	5	0	5.8	5	14.2	NW	45	N	18+	9	10	12	5.7	60
Goodland	3645	887.9	1019.9	37	14	25.0	-.8	57	9	-11	19	0	31	16	75	1.23	.92	.87	6	0	12.1	8	12.0	WSW	*37	NW	1	12	7	12	5.7	--
Topeka	877	984.1	1020.2	37	20	28.2	-.5	68	12	-2	23	0	28	21	76	1.09	.02	.57	6	0	3.6	4	11.2	W	35	SW	12	7	5	19	6.8	47
Wichita	1321	969.5	1020.5	39	23	30.9	-1.1	66	12	7	20	0	27	25	79	1.37	.32	.70	6	1	6.1	6	12.4	NNW	36	NW	18	9	6	16	6.5	51
KENTUCKY																																
Lexington	979	983.9	1020.8	42	29	35.9	2.0	67	12	9	23	0	22	30	82	2.50	-2.00	1.36	9	0	.3	T	11.8	SSW	--	---	--	2	7	22	8.2	--
Louisville	474	1000.6	1020.3	45	31	38.0	3.1	70	13	14	22	0	20	30	77	2.55	-1.55	1.68	7	0	.3	T	9.8	WSW	29	W	19+	3	6	22	7.9	27
LOUISIANA																																
Baton Rouge	64	1018.6	1021.7	59	41	50.2	-2.2	80	13+	25	23	0	7	43	76	3.36	-2.13	1.50	7	4	T	0	9.3	NNW	--	---	--	5	6	20	7.5	--
Lake Charles	12	1020.3	1021.5	58	42	49.8	-2.8	76	12	28	20	0	6	43	81	3.79	-1.03	1.73	9	1	T	0	10.0	NNW	*27	NNW	29+	3	8	20	7.5	--
New Orleans (U)	9	------	------	60	46	52.8	-3.1	79	13+	29	23	0	1	--	79	3.99	-.79	1.55	9	4	T	0	7.0	---	23	NW	29	3	9	19	7.3	38
New Orleans	3	1019.3	1021.5	61	43	51.8	-3.1	81	13	25	23	0	6	45	81	3.34	-1.34	1.15	8	4	T	0	9.5	NNW	*29	NW	29	2	10	19	7.8	--
Shreveport	252	1012.5	1021.9	54	38	45.9	-1.9	77	11	22	20	0	10	37	72	3.08	-1.64	1.00	10	2	T	T	10.3	S	--	---	--	9	5	17	6.7	51
MAINE																																
Caribou	624	989.7	1013.6	21	3	12.0	3.3	38	3	-18	10	0	31	5	73	2.24	.00	.76	13	0	29.1	20	12.5	NW	*38	WNW	17	11	5	15	5.9	--
Portland	61	1011.0	1015.1	33	15	23.7	3.0	48	3	-8	9	0	30	16	76	2.65	-1.78	1.27	13	0	21.4	11	9.8	WNW	33	S	3	10	8	13	5.7	51
MARYLAND																																
Baltimore (U)	14	------	------	43	32	37.7	1.1	54	27+	20	22+	0	14	--	--	2.18	-1.48	.79	12	--	----	--	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1014.0	1019.0	44	29	36.0	1.8	56	27+	14	25	0	20	25	69	2.31	-1.35	.84	12	0	.3	--	9.6	WNW	34	W	19	8	6	17	6.8	51
Frederick	294	------	------	41	27	33.9	1.2	55	10	13	25	0	25	--	--	2.47	-.41	.70	13	0	1.0	1	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.	629	990.2	------	34	21	27.3	----	53	3	5	9	0	31	--	72	3.89	-.20	1.28	11	0	11.6	7	14.5	NW	60	S	3	--	--	--	----	46
Boston	15	1010.5	1015.4	37	25	30.9	1.8	57	3	9	10	0	29	19	65	3.04	-.46	.92	10	0	10.2	5	14.5	NNW	52	SW	3	10	7	14	5.9	59
Nantucket	43	1014.7	1015.4	39	27	33.0	.9	53	3	17	10	0	27	24	72	4.32	.45	1.58	9	0	9.7	5	15.4	WNW	42	SW	3	10	1	20	6.8	41
Pittsfield	1153	------	------	31	14	22.2	1.0	47	3	-4	2	0	31	--	--	2.93	-.17	1.83	12	--	17.4	11	----	---	--	---	--	--	--	--	----	--
Worcester	986	977.3	1015.2	31	18	24.8	.8	51	3	3	10	0	31	12	63	3.09	-.24	1.19	9	0	16.6	8	10.1	W	*35	NW	20	7	10	14	6.1	--
MICHIGAN																																
Alpena	689	990.9	------	29	12	20.7	-.4	40	30	-14	9	0	31	17	79	1.68	-.44	.65	15	0	19.0	13	6.8	W	31	NW	8	1	6	24	8.7	25
Detroit(City AP)	619	990.5	1018.4	34	24	29.0	2.8	54	13	14	6+	0	28	22	76	3.06	.98	1.63	15	0	6.7	4	11.9	WNW	42	W	5	1	3	27	9.3	16
Detroit (M. Wayne Co.)	630	993.6	1018.4	34	22	27.8	----	54	13	11	25+	0	28	23	80	2.68	----	1.40	15	0	4.9	3	11.9	WSW	--	---	--	0	4	27	9.3	--
Detroit(Willow Run)	722	988.5	1018.0	34	22	28.1	2.8	52	13	11	25	0	29	23	80	3.03	1.23	1.74	15	0	4.8	3	12.8	SW	*35	WSW	7	0	4	27	9.3	--
Escanaba (U)	594	993.6	------	27	14	20.6	3.1	36	14+	-5	11+	0	31	--	76	1.62	.09	.61	12	0	12.4	11	9.8	---	52	NE	15	5	6	20	7.5	32
Flint	761	989.2	1018.0	32	19	25.4	2.2	46	12	7	25	0	31	22	83	2.24	.66	.88	15	0	13.5	9	10.5	WSW	*23	WNW	8+	1	2	28	9.1	--
Grand Rapids	681	991.9	1018.1	32	22	26.8	3.3	42	12+	10	21+	0	30	23	83	3.50	1.60	1.89	19	0	25.0	9	10.4	WNW	30	NW	8+	0	4	27	9.3	19
Lansing	852	984.8	1018.0	33	19	26.0	2.2	52	12	6	25	0	31	20	77	2.87	1.00	1.56	17	0	10.3	6	13.3	W	47	W	8	0	6	25	8.9	34
Marquette (U)	677	989.2	------	27	16	21.3	2.6	35	30+	-5	5	0	31	--	77	1.58	-.59	.39	20	0	29.1	17	8.4	W	27	SW	29	3	5	23	8.4	41
Muskegon	627	993.9	1018.1	32	22	27.4	2.5	42	12	9	17	0	30	23	81	3.36	1.41	1.56	21	0	25.2	13	11.6	W	*37	SW	6	0	2	29	9.5	--
Sault Ste. Marie	721	993.6	1017.5	24	12	18.2	4.4	36	30	-4	9	0	31	14	83	1.65	-.51	.24	23	0	24.4	21	9.8	ESE	*38	WNW	8	2	5	24	8.6	22
MINNESOTA																																
Duluth	1409	975.6	1019.0	19	2	10.5	2.2	33	13	-25	4	0	31	5	77	.88	-.35	.30	12	0	20.4	19	12.7	WNW	54	W	7	4	7	20	7.6	44
Intern'l Falls	1179	976.0	1019.9	16	-5	5.4	2.4	34	30	-29	4	0	31	4	74	.57	-.32	.25	12	0	6.1	8	7.4	W	*25	WNW	7	3	10	18	7.4	--
Minneapolis	830	984.8	1020.2	25	10	17.5	2.9	37	12	-19	5	0	29	11	76	.68	-.12	.48	10	0	9.5	7	9.3	WNW	26	SW	5	10	3	18	6.6	48
Rochester	1017	981.0	1020.2	26	12	19.2	4.9	41	31	-16	4	0	29	14	79	.40	-.53	.19	6	0	4.4	2	11.2	WNW	--	---	--	9	4	18	6.9	--
St. Cloud	1034	980.0	1020.4	21	3	11.9	1.4	35	13+	-26	4	0	31	7	78	.92	.17	.73	8	0	10.8	9	----	---	--	---	--	6	9	16	7.0	--
MISSISSIPPI																																
Jackson	305	1009.0	1021.5	54	37	45.5	-2.8	76	11	21	23+	0	10	38	77	5.29	.20	1.17	13	4	T	0	7.3	NW	38	NW	29	6	5	20	7.3	39
Meridian	292	1007.3	1021.6	55	36	45.2	-2.3	76	11	18	21	0	14	39	81	6.14	1.05	2.04	10	2	T	0	7.7	NE	26	WNW	29	5	8	18	7.2	--
Vicksburg (U)	234	1012.2	------	53	39	46.0	-3.2	77	11	22	23	0	8	--	--	4.99	-.45	1.18	12	5	T	0	8.0	---	30	SE	17	5	9	17	6.7	42
MISSOURI																																
Columbia	778	991.2	1020.9	39	24	31.4	1.6	66	12	1	23	0	25	25	80	1.55	-.25	.59	7	0	4.4	3	10.9	WNW	31	NW	18	8	5	18	6.6	44
Kansas City	741	984.1	1020.6	39	23	30.9	.9	69	12	2	22	0	27	23	74	1.43	.00	.49	9	0	5.1	4	9.1	WSW	32	SW	12	8	6	17	6.7	43
St. Joseph	809	984.4	------	35	19	27.0	-.1	66	12	-4	23	0	28	--	--	1.83	.68	.78	7	2	5.3	5	11.3	---	*32	NNW	21	9	7	15	6.1	--
St. Louis (RFC)	465	------	------	41	28	34.5	1.2	66	12	9	23+	0	22	--	--	1.42	-.90	.50	9	--	1.0	1	----	---	--	---	--	--	--	--	----	--
St. Louis	552	999.3	1020.7	40	27	33.5	1.3	66	12	5	23	0	25	27	81	1.11	-.81	.39	10	0	2.9	2	9.4	WNW	32	W	15	6	8	17	7.2	38
Springfield	1265	971.2	1020.6	43	26	34.7	2.0	69	12+	6	22	0	23	27	78	.95	-1.36	.38	8	0	2.2	1	14.1	SSE	40	SW	14	6	8	17	7.3	38
MONTANA																																
Billings	3567	890.6	1019.3	32	15	23.2	.3	49	30+	-2	19	0	29	13	68	.66	.13	.32	8	0	10.1	6	11.1	SW	31	W	6	7	9	15	6.8	50

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
		ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F or above	No. of days: Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	No of days: 01 inch or more	No of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max depth on ground	Average hourly speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F	°F.	°F.	°F		°F				°F	%	In.	In.	In			In.	In	M p. h.		M p h			0–3	4–7	8–10	0–10	%
MONTANA (Cont'd.)																																
Butte	5530	828.3	1023.9	27	0	13.4	-0.8	45	29+	-27	20+	0	31	7	--	0.36	-0.23	0.17	5	0	5.4	5	5.2	SW	*29	WNW	8	6	4	21	7.4	--
Glasgow	2277	942.4	1020.8	19	0	9.1	-1.4	42	30+	-17	4+	0	31	6	84	.43	.03	.23	7	0	5.8	6	---	---	---	---	---	10	8	13	6.0	--
Great Falls	3664	887.6	1018.9	31	15	22.8	.1	53	29	-6	18	0	30	13	66	.28	-.27	.09	8	0	[illegible]	6	[illegible]	SW	38	SW	6	9	7	15	6.3	64
Havre (U)	2488	927.2	1020.7	27	5	16.0	-.2	53	29	-13	2	0	30	--	-	.67	.21	.46	7	0	9.8	8	8.8	SW	32	SW	6	9	6	16	6.4	55
Helena	3893	973.4	1022.9	26	6	15.7	1.9	49	30	-24	20	0	31	8	71	.23	-.28	.15	4	0	4.9	1	[illegible]	NW	40	W	6	8	6	17	6.5	65
Kalispell	2965	------	------	23	3	14.3	-6.0	43	30	-23	21+	0	31	-	--	1.30	-.02	.28	17	0	20.6	14	---	-	-			5	9	17	7.2	--
Miles City	2629	933.0	1021.0	28	7	17.5	1.4	51	30	-17	4	0	31	12	--	.51	.04	.17	8	0	6.0	3	8.9	NW	*29	W	6	8	4	19	6.9	-
Missoula	3200	904.5	1024.3	26	8	16.7	-2.7	51	29	-22	20	0	31	12	79	1.04	.23	.29	12	0	17.9	10	5.5	SE	16	SW	6	5	5	21	7.8	27
NEBRASKA																																
Grand Island	1841	951.6	1020.9	28	9	18.2	-4.8	44	9	-12	22+	0	31	15	82	1.65	1.07	.71	5	0	16.1	11	10.4	WSW				10	6	15	5.7	--
Lincoln (U)	1166	------	------	28	15	21.4	-3.6	43	30+	-6	23+	0	31	--	--	1.48	.66	.61	7	0	11.1	8	9.3	S	37	W	2	9	7	15	6.4	62
Norfolk	1544	962.4	1021.3	25	6	15.5	-3.8	41	30	-24	5	0	31	10	75	1.74	.95	.90	5	0	16.2	12	-	---	-	-	-	8	6	17	6.6	--
North Platte	2779	916.6	1020.4	31	8	19.6	-4.4	49	30	-10	19	0	31	13	75	1.12	.73	.69	5	0	12.4	8	7.6	NW	49	NE	14	8	12	11	6.1	62
Omaha	978	979.0	1021.3	28	13	20.5	-2.5	42	31	-10	23	0	30	16	81	1.17	.32	.63	10	0	14.0	10	11.3	NNW	36	N	15+	9	3	19	6.5	50
Omaha N.Omaha AP	1323	970.2	------	25	11	18.2	-2.4	40	30	-14	5	0	31	--		1.57	.72	.73	9	0	15.8	12	---	-	--	---	-	7	5	19	6.9	--
Scottsbluff	3950	878.8	1020.4	36	12	24.0	.5	59	29	-11	4	0	31	14	70	.26	-.07	.14	4	0	3.8	1	7.1	NW	*21	WNW	[illegible]	6	9	16	6.8	
Valentine	2587	925.2	------	33	9	21.3	1.3	61	30	-14	5	0	31		77	.04	-.52	.04	1	0	[illegible]	2	10.1	W	37	N	2	6	9	16	6.8	68
NEVADA																																
Elko	5075	845.6	1022.0	33	8	20.5	-1.4	44	10	-19	18	0	31	16	76	.62	-.45	.21	8	0	12.8	6	3.5	SW	*17	S	8	3	5	23	8.1	--
Ely	6257	808.0	1020.8	32	6	19.0	-4.0	48	23	-17	4	0	31	12	71	.80	-.14	.42	10	0	9.9	10	11.7	S	38	SW	10	4	8	19	7.2	66
Las Vegas	2162	953.3	1020.2	51	31	41.0	3.2	63	28	20	2	0	19	25	56	.56	.12	.29	4	0	.4	T	7.0	WSW	*31	NNW	16	12	10	9	4.9	86
Reno	4404	862.5	1020.8	38	17	27.5	-3.7	53	8	-9	16	0	31	21	77	1.21	.17	.48	9	0	15.4	6	4.1	S	23	SE	11+	3	3	25	8.2	39
Winnemucca	4299	869.6	1022.4	37	13	24.9	-2.9	55	8	-14	13	0	31	20	78	1.17	.21	.30	13	0	8.0	3	4.7	NE	29	W	8	1	4	26	8.8	21
NEW HAMPSHIRE																																
Concord	339	1005.9	1015.9	34	13	23.2	3.1	49	3	-12	11	0	30	14	68	2.46	-.45	1.23	10	0	16.5	17	8.1	NW	28	NW	19	10	7	14	5.8	54
Mt. Washington	6262	796.9	------	14	-1	7.0	1.6	31	3	-34	9	0	31	--	82	4.36	-.74	1.09	15	0	41.6	16	44.6	NW	‡123	NW	17+	6	6	19	7.3	38
NEW JERSEY																																
Atlantic City (U)	10	------	------	43	31	36.9	1.1	53	3	22	12	0	17	--	-	2.21	-1.57	.67	9	--			11.5		45	S	3	--	--	-	---	49
Atlantic City	58	1015.6	1018.3	42	28	35.3	.7	56	27	17	2	0	23	26	72	2.69	-.79	.92	10	0	.6	T	13.1	WNW	*32	WNW	19+	7	9	15	6.7	-
Newark	11	1016.6	1018.0	40	29	34.4	2.9	57	3	19	12	0	24	23	63	2.79	-.81	1.07	10	0	3.6	3	10.2	WNW	*36	SSW	3	7	7	17	6.7	
Trenton (U)	56	1010.1	------	40	29	34.6	2.0	57	3	21	12	0	25	--	-	3.30	.14	1.03	8	0	1.1	1	9.6	--	34	S	3	7	9	15	6.5	54
NEW MEXICO																																
Albuquerque	5310	849.6	1019.9	44	22	33.0	-.7	58	31	9	19+	0	27	20	60	.34	.06	.20	5	0	1.8	2	6.2	N	43	S	13	12	12	7	4.4	73
Clayton	4969	843.9	1016.9	44	18	30.8	-2.1	66	9	0	20	0	28	--	--	1.06	.79	.71	6	1	4.4	4	-	---		---	--	14	6	11	4.9	--
Raton	6379	802.9	1019.3	40	8	24.1	2.1	60	9	-10	20+	0	31			.91	.49	.73	4	0	6.4	3	- -	---		--	--	16	6	9	4.4	--
Roswell	3612	894.0	1020.0	52	23	37.5	-2.1	67	31	3	6	0	26	24	62	1.26	.81	.38	6	1	4.5	3	8.0	---	41	SW	13	15	4	12	4.6	--
NEW YORK																																
Albany	277	1014.0	1017.8	30	15	22.7	.2	43	8	-4	12	0	30	16	75	2.51	.24	.68	13	0	20.4	9	9.5	WNW	41	W	16+	5	10	16	7.0	54
Binghamton	1590	955.4	1016.4	31	20	25.7	4.0	41	3	10	12+	0	30	21	82	2.36	-.02	.73	17	0	14.2	8	9.4	NW	56	W	5	3	3	23	8.2	31
Buffalo	693	988.4	1017.8	32	21	26.5	1.0	40	7+	10	9+	0	31	21	80	3.90	1.12	1.17	21	0	18.3	4	13.9	WSW	47	SW	8	1	6	24	8.6	21
New York (U)	10	1015.2	------	40	29	34.4	1.5	54	3	17	12	0	22	--	--	3.16	-.30	.92	10	0	2.6	2	14.5		63	S	3	6	9	16	6.6	51
New York	19	1015.8	1017.7	39	30	34.5	1.5	53	3	19	12	0	22	23	64	2.77	-.42	.89	11	0	2.2	1	17.8	WNW	52	NW	9	5	7	19	7.0	-
Rochester	543	997.3	1017.8	31	19	24.6	-.1	39	2	3	12	0	31	21	82	2.82	.46	.86	22	0	32.7	13	11.8	WSW	51	W	7	1	6	24	8.6	34
Schenectady	217	------	------	32	17	24.6	3.1	43	8	-2	12	0	30	--	--	2.88	.46	1.03	13	-	22.7	12	-	---	--	---	-	8	16	7	4.8	--
Syracuse	424	994.4	1017.5	32	18	24.7	-.8	43	15	0	9	0	30	19	78	3.11	.32	.65	18	1	31.6	14	11.2	WSW	43	S	2	4	4	23	7.9	28
NORTH CAROLINA																																
Asheville (U)	2203	939.0	------	47	31	39.0	-.4	66	13	12	23	0	17	--	--	2.79	-.19	1.10	13	0	2.0	1	9.6	-	30	NW	19+	8	8	15	6.5	44
Cape Hatteras	9	1017.9	1018.8	54	39	46.4	-1.6	67	15+	24	26+	0	8	39	77	6.75	2.65	3.31	11	0	T	0	11.5	NNE	--	---	--	10	6	15	5.9	--
Charlotte	725	991.0	1020.0	52	33	42.5	.2	75	13	15	23	0	13	33	72	5.74	2.00	1.47	13	0	.0	0	10.5	SW	56	NE	30	10	4	17	6.3	44
Greensboro	891	987.5	1020.6	48	31	39.7	.7	73	15+	10	23	0	17	29	72	4.44	1.07	1.57	12	0	1.8	1	10.1	WSW	35	NE	31	10	4	17	6.3	48
Raleigh	433	1005.6	1019.9	51	33	41.6	.2	74	15+	16	23	0	15	32	70	4.59	1.25	2.34	12	0	T	T	8.8	WNW	*33	N	31+	10	4	17	6.2	45
Wilmington	30	1018.3	1019.5	56	36	45.9	-1.9	74	13	19	23	0	10	39	79	3.63	.51	1.34	10	0	.0	0	9.9	NW	43	E	11+	9	4	18	6.4	47
Winston-Salem	967	983.6	1020.1	48	32	40.1	.8	74	13	17	23	0	14	28	65	4.64	.95	1.66	11	0	2.4	1	9.8	WNW	*16	NNE	31	11	3	17	6.1	--
NORTH DAKOTA																																
Bismarck	1650	958.0	1021.2	21	1	11.0	1.8	45	29	-22	5	0	31	6	77	.35	-.01	.25	5	0	6.0	7	11.8	WNW	42	NW	4	3	9	19	7.6	44
Devils Lake (U)	1471	963.4	------	13	-6	3.6	-1.2	38	30	-25	5+	0	31	--	78	.92	.52	.63	7	0	11.2	11	7.5	NW	23	NW	7	4	7	20	7.2	59
Fargo	895	984.4	1021.3	18	-2	8.1	1.0	38	30	-21	5	0	31	2	73	.17	.43	.08	5	0	6.2	6	11.9	S	38	N	18+	3	7	21	7.2	50
Williston (U)	1877	949.2	1020.9	20	1	10.2	.2	44	30	-22	5	0	31	4	72	.61	.12	.36	8	0	6.0	7	6.1	W	22	NW	4	8	6	17	6.7	48
OHIO																																
Akron	1210	979.5	1019.0	37	24	30.2	2.8	57	13	9	22	0	27	25	83	2.63	-.11	1.01	12	0	1.9	1	12.4	SW	-			2	4	25	8.7	--
Cincinnati Obs.	761	------	------	42	29	35.3	2.2	67	12	10	22	0	22	--	--	2.85	-.59	1.04	11	1	.5	T	7.4	---	21	W	15	-	-		----	[illegible]
Cincinnati	869	987.0	1020.1	41	28	34.5	2.7	66	12	4	23	0	22	27	75	2.48	-.92	.94	12	0	2.5	2	11.5	SW	*29	SW	18	2	7	22	8.5	
Cleveland	787	1018.5	989.5	38	25	31.3	2.8	60	13	12	22	0	26	26	80	2.33	.05	1.00	15	0	2.8	3	10.5	SW	31	W	8	2	3	26	8.8	12
Columbus (U)	724	------	------	40	28	33.8	2.7	62	12	10	22+	0	23	--	--	2.11	-.70	.75	8	0	.5	1	----	---	--	---	--					-
Columbus	815	989.1	1020.3	41	27	34.1	4.4	64	13	11	22+	0	22	26	76	2.31	-.63	.69	10	0	.5	T	10.6	WSW	31	W	8	2	7	22	8.2	33
Dayton	1002	982.1	1019.6	39	25	31.8	2.1	62	12	8	22	0	24	25	79	1.97	-.99	.69	11	0	1.1	T	12.3	WNW	37	W	8	3	7	21	8.1	32
Mansfield	1296	------	------	36	23	29.2	----	57	13	8	22+	0	26	--	--	2.54	----	.92	15	0	1.5	1	---	---	-	---		2	5	24	8.7	--
Sandusky (U)	603	995.2	------	35	24	29.8	1.0	59	13	10	22	0	29	--	--	2.81	.52	1.14	13	0	1.4	2	9.5	---	35	SW	25	1	7	23	8.4	27
Toledo	676	922.0	1018.9	35	23	28.7	2.3	58	13	10	25+	0	27	24	80	2.94	.69	1.49	12	0	3.0	1	9.0	WSW	30	NW	8	1	4	26	8.9	28
Youngstown	1178	974.1	1018.3	37	23	29.9	2.4	56	13	13	22+	0	30	24	81	2.60	-.72	.81	13	0	8.3	3	12.8	SW	*32	SW	6+	2	3	26	8.6	
OKLAHOMA																																
Oklahoma City	1280	976.0	1021.1	44	28	36.3	-.8	69	12	14	19	0	22	30	80	1.47	-.03	.52	8	1	7.7	5	12.6	S	63	W	14	8	7	15	6.5	47
Tulsa	672	995.6	1021.1	45	29	37.1	-.3	73	12	14	22	0	21	30	76	1.22	-.76	.43	6	1	6.1	4	8.8	S	32	SW	14	5	7	19	7.2	35
OREGON																																
Astoria	8	1016.3	1016.9	46	35	40.3	.2	63	29	23	1	0	13	36	87	10.09	.57	1.58	27	0	1.1	1	8.5	E	*16	S	29	1	3	27	9.6	
Burns (U)	4140	873.7	1021.3	32	13	22.7	-1.2	44	30+	-9	13	0	31	18	82	2.08	.61	.60	22	0	21.2	15	---	--				2	3	26	8.8	
Eugene	361	1004.4	1018.3	44	32	37.8	-.4	64	29	20	3	0	16	--	--	1.83	-.58	1.32	18	0	T	T	7.1	---	*29	S	28	0	6	25	9.1	--
Meacham	4050	------	------	29	19	24.0	-.9	43	30	3	2	0	30	--	--	3.25	-.99	.67	18	0	27.8	25	----	--	-	-	--	2	4	25	8.6	
Medford	1312	970.5	1018.9	47	32	39.5	2.3	62	24	17	4	0	15	32	79	2.35	-.16	1.38	15	0	1.4	T	5.0	SE	*31	SE	29	1	3	27	9.0	--
Pendleton	1492	966.1	1021.7	33	18	25.4	-5.2	59	29	-2	13	0	28	22	87	1.10	-.38	.36	14	0	10.9	9	5.8	SE	*24	SSE	29	2	7	22	8.1	--
Portland	21	1013.2	1018.9	39	31	35.4	-2.0	58	29	21	1	0	19	31	83	3.93	-.66	.89	22	0	10.3	5	11.8	E	35	SW	29	0	1	30	9.6	13
Roseburg	505	999.0	1018.0	48	33	40.4	.9	63	29	21	1	0	14	--	--	3.65	-.95	.93	20	0	.9	1	3.5	---	25	SE	29	0	5	26	9.2	12
Salem	195	1011.5	1018.8	43	30	36.6	-1.8	63	30	17	3+	0	19	33	87	4.41	-1.31	1.18	21	0	6.9	6	5.7	S	*23	SSW	29	1	3	27	8.9	--
Sexton Summit (R)	3836	881.8	1018.3	37	28	32.1	-3.7	48	4	17	2+	0	21	--	--	4.51	.49	1.69	21	0	23.5	14	11.9	S	--	--	-	1	3	27	9.0	
PACIFIC AREA																																
Canton Island	8	1007.8	1008.2	90	79	84.3	1.3	92	6+	77	26+	17	0	73	75	.42	-.66	.19	8	0	.0	0	16.9	ENE	*28	E	20+	0	2	29	9.6	--
Guam (R)	361	------	------	83	72	77.7	.0	85	17+	63	4	0	0			2.71	-.48	.92	25	0	.0	0	8.8	E	23	E	31			-	-	39
Johnston Island	7	1013.5	1014.1	80	73	76.6	----	83	27	70	28+	0	0	67	74	1.19	----	.63	9	0	0	0	13.5		30	E	18	3	24	4	5.9	72
Koror (R)	94	1006.1	1009.9	86	75	80.5	.3	90	3+	72	28+	2	0	75	83	15.16	3.13	5.29	20	2	0	0	7.5	ENE	21	E	28+	-	2	29	9.3	18
Majuro	10	1008.8	1009.1	84	78	81.0	----	86	29+	74	30+	0	0	74	79	9.17	----	3.27	20	0	.0	0	13.6	ENE	32	E	20	0	1	30	9.4	69
Ponape (R)	120	1004.4	1009.7	86	76	80.7	-.5	88	19+	71	12+	0	0	73	79	13.82	2.08	2.86	18	1	0	0	7.5	NE	23	NE	26	0	2	29	9.5	50
Truk, Moen Is.	5	1009.5	1009.8	85	76	80.6	-.3	88	4	72	12	0	0	74	81	12.50	4.91	3.25	21	0	.0	0	9.1	NNE	24	NE	26	0	1	30	9.8	55
Wake Island	11	1014.2	1014.6	82	73	77.8	.3	85	23+	69	29+	0	0	68	72	.41	-.85	.11	8	0	0	0	12.0	ENE	*23	ESE	16+	14	13	4	4.4	--
Yap (R)	55	1008.5	1010.5	86	77	81.3	.5	88	18+	73	28	0	0	75	81	7.78	.95	3.30	19	0	.0	0	8.2	NE	*22	NE	24	0	0	31	9.8	73

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
PENNSYLVANIA																																
Allentown	376	1003.6	1018.4	38	25	31.6	3.1	55	3	17	25+	0	29	23	76	3.66	0.45	1.18	8	0	3.9	2	12.0	W	*45	WNW	16	8	4	19	6.8	--
Erie	732	------	------	36	24	29.8	2.6	52	13+	15	6	0	31	--	--	3.09	.75	1.34	19	0	7.3	4	6.5	---	*18	WSW	6	3	0	28	9.0	--
Harrisburg	335	1004.2	1018.7	40	28	33.8	2.7	48	26+	18	25	0	26	22	64	2.10	-.52	.89	11	0	.7	1	8.2	W	30	W	8	5	5	21	7.5	58
Philadelphia (U)	35	------	------	42	32	36.8	1.9	56	3	24	22	0	20	--	--	----	----	----	--	--	----	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1013.4	1018.1	41	27	34.2	1.0	56	3	17	12	0	27	25	71	3.11	-.26	.86	9	0	.8	T	9.3	WNW	31	NW	8	7	6	18	6.9	51
Pittsburgh (U)	749	------	------	42	29	35.4	2.4	61	13	17	22	0	22	--	--	2.85	.02	1.13	12	--	1.7	0	----	---	--	---	--	--	--	--	----	24
Pittsburgh	1151	987.7	1019.1	38	24	30.7	1.7	58	13	11	25+	0	28	21	70	3.01	.24	1.14	12	0	2.2	1	10.4	W	*32	WNW	15	2	5	24	8.5	48
Reading (U)	266	1005.8	------	40	29	34.8	2.6	56	3	21	25	0	24	--	--	3.40	.25	1.50	8	0	.5	T	11.1	---	56	S	3	6	9	16	6.8	45
Scranton	940	982.5	1018.1	35	23	28.9	2.0	43	29+	13	25+	0	29	20	70	2.94	.68	1.31	10	0	6.2	3	9.1	SW	31	W	8	3	10	18	7.5	32
Williamsport	527	998.9	1018.6	37	25	31.1	2.6	44	8+	16	25	0	28	21	68	2.21	-.38	.77	10	1	2.0	1	9.8	W	*29	SSE	2	2	11	18	7.7	--
RHODE ISLAND																																
Block Island	110	1011.0	------	39	28	33.0	1.1	54	3	17	11	0	28	--	--	4.28	.61	1.15	11	0	7.9	4	----	---	--	---	--	7	11	13	6.1	--
Providence	55	1009.9	1016.3	37	22	29.1	.4	56	3	10	14	0	30	19	67	3.02	-.73	1.08	11	0	9.9	5	11.5	N	43	S	3	8	9	14	5.9	55
SOUTH CAROLINA																																
Charleston (U)	9	------	------	57	43	50.0	-1.4	77	13	25	23	0	4	--	--	4.36	1.88	2.13	11	--	.0	0	9.6	---	36	NE	30	--	--	--	----	--
Charleston	41	1018.4	1020.5	59	39	49.2	-1.1	78	13	20	24	0	9	40	75	5.81	3.33	1.98	12	0	.0	0	8.3	NNE	36	W	19+	10	4	17	6.3	70
Columbia	217	1007.1	1020.4	56	35	45.3	-1.7	76	13	16	24	0	11	36	74	7.15	4.01	2.65	13	0	T	T	7.2	SW	*28	NNE	30	9	6	16	6.2	54
Florence	146	1013.5	1019.5	56	36	45.9	-.4	77	13	18	23	0	10	35	71	4.46	1.61	1.62	11	0	T	0	7.6	NNE	37	NNE	30	10	7	14	6.1	--
Greenville	1018	981.6	1020.0	51	35	42.9	-.4	78	13	18	23	0	12	32	70	5.60	1.14	1.36	13	0	T	T	7.8	NE	30	SW	15	9	8	14	6.3	50
Spartanburg	801	------	------	51	35	42.7	-.7	76	13	15	23	0	11	--	--	5.55	1.04	1.28	13	0	T	T	8.2	---	*30	SW	15	--	--	--	----	--
SOUTH DAKOTA																																
Huron	1282	971.6	1021.4	21	4	12.2	-1.3	37	6	-25	5	0	31	8	83	.55	-.02	.43	5	0	6.7	10	13.1	SSE	35	S	1	5	7	19	7.4	45
Rapid City	3165	901.1	1019.8	36	12	24.0	2.9	64	29	-9	5+	0	31	13	67	.16	-.32	.14	5	0	2.0	2	12.0	NNW	45	N	17	4	6	21	7.5	42
Sioux Falls	1420	966.5	1020.9	23	5	14.1	-.1	37	30	-25	5	0	31	6	70	1.65	.93	1.61	3	0	12.3	15	10.3	NW	*31	NNE	14	5	9	17	7.3	--
TENNESSEE																																
Bristol	1519	964.3	1020.3	46	31	38.3	-.3	66	13	15	22	0	20	31	76	2.24	-1.26	.62	14	0	6.6	5	7.8	NE	31	WSW	18	3	7	21	7.9	--
Chattanooga	670	992.4	1020.9	50	34	41.9	.3	74	13	15	23	0	14	34	77	4.96	-.27	1.28	13	0	1.3	T	7.8	NNE	32	SW	18	6	6	19	7.2	41
Knoxville	950	984.4	1020.7	48	33	40.8	.3	71	13	15	23	0	15	32	74	3.39	-1.15	.80	13	0	8.9	6	8.4	NE	40	SW	18	7	4	20	7.5	38
Memphis (U)	271	------	------	47	36	41.3	-.6	72	14+	17	22	0	14	--	--	3.86	-1.52	.97	9	--	8.0	4	----	---	--	---	--	--	--	--	----	--
Memphis	263	1006.7	1021.9	48	36	41.9	.3	75	13	15	23	0	15	34	76	3.74	-1.81	.79	12	3	6.5	5	9.6	NW	32	SW	14	3	5	23	8.0	37
Nashville	577	1000.6	1021.1	47	33	40.0	.1	75	13	15	23	0	16	34	84	3.22	-1.71	.69	11	0	7.4	7	8.4	S	32	WSW	18	3	4	24	8.1	28
Oak Ridge	905	987.0	------	48	33	40.1	1.1	71	13	16	23	0	14	--	--	3.75	-2.31	.75	14	2	7.8	7	5.1	---	42	---	18	7	5	19	7.3	--
TEXAS																																
Abilene	1759	957.3	1020.0	54	34	44.2	.9	73	11	16	20	0	18	32	67	2.14	1.26	1.10	8	1	T	T	11.1	S	41	W	14	12	8	11	5.0	67
Amarillo	3590	889.3	1018.9	41	22	31.4	-3.9	62	30	-4	6	0	25	23	71	1.30	.66	.61	4	1	12.9	7	11.9	SW	41	W	13	13	5	13	5.2	72
Austin	615	999.0	1021.4	58	41	49.3	-.6	75	12	24	21	0	8	40	75	1.03	-1.60	.34	10	0	.0	0	9.0	NW	29	NW	29	7	5	19	7.0	40
Brownsville	16	1017.3	1020.1	70	54	61.7	1.2	83	14	37	31+	0	0	54	77	.65	-.78	.42	4	0	.0	0	10.3	NNW	32	S	12	3	6	22	8.1	29
Corpus Christi	41	1020.0	1021.2	64	48	56.0	-.9	82	14	33	31+	0	0	49	79	1.56	.17	.48	10	2	.0	0	10.1	NE	27	SE	14	5	3	23	7.9	39
Dallas	487	1002.7	1022.0	53	36	44.8	-.9	76	12	21	20	0	11	35	72	3.21	.74	1.71	12	1	.2	T	10.7	S	38	NW	28	9	7	15	6.1	50
Del Rio (U)	1091	------	------	61	42	51.6	-.3	80	12	27	20	0	4	--	--	.50	-.33	.21	8	0	.0	0	----	---	--	---	--	--	--	--	----	--
El Paso	3920	887.9	1018.0	55	30	42.4	-1.0	69	31	19	18	0	21	23	48	.72	.30	.61	4	0	T	T	10.6	[illegible]	46	W	14	16	8	7	4.1	77
Fort Worth	544	1000.2	1021.6	53	35	44.1	-1.2	77	12	21	24	0	17	36	75	2.29	-.13	1.31	10	1	.9	1	12.1	S	*40	WNW	14	11	5	15	6.1	--
Galveston (U)	7	------	------	58	47	52.5	-2.0	69	14+	33	20	0	0	--	--	.58	-3.51	.32	8	--	.0	0	13.0	---	31	NW	29	--	--	--	----	40
Galveston	5	1003.1	1022.0	58	46	51.7	-2.6	69	14+	33	20+	0	0	43	74	.80	-3.54	.35	9	1	.0	0	9.8	N	--	---	--	4	5	22	7.8	--
Houston (U)	41	1015.9	------	60	45	52.3	-1.5	75	27	28	20	0	3	—	--	2.00	-1.98	.56	10	[illegible]	.0	0	10.3	S	38	NW	29	7	4	20	7.1	41
Houston	50	1019.0	1022.0	60	44	51.8	-1.5	76	27	29	20	0	3	43	76	2.05	-2.11	.53	10	1	.0	0	11.9	NW	--	---	--	5	5	21	7.8	--
Laredo	500	1005.1	1020.5	66	46	55.9	-1.7	82	12+	30	20	0	2	43	68	.44	-.58	.25	12	0	.0	0	7.3	ENE	*22	NNW	28+	5	3	23	8.0	--
Lubbock	3243	904.8	1019.7	50	25	37.5	-1.3	72	10	7	6	0	26	27	70	.66	-.01	.45	5	2	3.6	3	12.4	WSW	*36	N	28	18	1	12	4.2	--
Midland	2854	917.7	1018.6	55	32	43.3	-.9	70	26+	18	19	0	19	31	66	1.17	.55	.58	5	1	T	0	10.2	S	*37	WSW	14	14	6	11	4.7	--
Port Arthur	16	1020.0	1021.4	59	42	50.5	-2.4	77	14	27	20	0	4	44	81	1.65	-3.47	.44	8	1	T	0	11.9	WNW	35	S	14	5	7	19	7.5	37
San Angelo	1903	951.6	1020.2	57	36	46.1	-1.2	74	27	17	20	0	13	35	69	1.95	.96	1.27	7	0	T	T	10.8	SW	*44	W	14	12	9	10	5.0	--
San Antonio	792	995.6	1021.1	59	41	50.1	-.5	76	27	23	21	0	9	40	73	.76	-1.05	.33	10	0	.0	0	9.1	NNW	30	NW	29	7	5	19	7.1	35
Victoria	110	1016.3	1021.1	62	44	53.2	-2.0	77	27	28	20	0	4	45	74	.52	-2.20	.15	8	0	.0	0	10.3	ENE	‡48	NNW	17	5	4	22	7.7	--
Waco	500	1002.4	1021.6	56	38	46.9	-.4	76	28	22	20	0	13	38	75	1.79	-.59	1.00	9	1	T	0	11.9	S	*32	NNW	29	8	5	18	6.5	--
Wichita Falls	1020	982.7	1020.9	51	31	40.8	.2	72	10	17	20+	0	20	31	72	1.25	-.06	.54	6	3	3.6	2	9.8	S	*30	WSW	14	12	8	11	5.1	--
UTAH																																
Milford	5028	845.6	1024.0	32	10	21.0	-2.8	51	30	-19	3	0	31	--	--	.38	-.19	.17	9	0	4.5	4	----	---	--	---	--	6	11	14	6.7	--
Salt Lake City	4220	873.0	1023.2	33	18	25.6	-.9	46	11+	-3	2	0	28	20	79	.96	-.24	.30	12	0	13.5	9	5.9	SSE	25	S	12+	2	7	22	8.3	34
Wendover	4237	873.4	1022.4	32	18	25.0	----	45	11	6	5+	0	31	--	--	.11	----	.06	4	0	1.1	1	----	---	--	---	--	5	7	19	7.4	--
VERMONT																																
Burlington	331	1002.1	1017.6	25	8	16.5	-1.4	40	3	-10	11	0	31	10	75	1.24	-.65	.35	14	0	16.0	11	6.9	NW	29	SW	3	3	8	20	7.5	46
VIRGINIA																																
Lynchburg	947	984.5	------	46	30	37.8	.1	73	13	13	24	0	19	--	--	2.39	-1.04	1.11	10	0	5.6	3	8.6	---	36	NE	31	11	4	16	6.1	46
Norfolk	26	1018.2	1019.8	49	35	41.7	.2	72	13	22	22	0	11	32	71	3.85	1.68	1.12	12	1	T	0	10.8	NNE	42	NE	31+	11	4	16	6.0	52
Richmond	162	1013.5	1020.0	47	31	38.8	.5	71	13	16	25	0	19	28	69	2.13	-1.51	.47	11	0	2.5	2	8.3	SW	34	S	3	9	4	18	6.7	45
Roanoke	1174	976.3	1019.8	46	31	38.0	.1	70	13	14	25+	0	19	26	66	1.92	-1.47	.65	13	0	4.8	3	10.9	WNW	--	---	--	8	6	17	6.9	--
WASHINGTON																																
Olympia	190	1010.2	1017.4	43	30	36.5	-.5	57	29	17	18	0	21	34	91	6.35	-.34	1.91	24	0	7.1	4	5.8	SW	*28	WSW	29+	1	3	27	9.0	--
Seattle (U)	14	------	------	46	39	42.2	1.5	63	31	29	1	0	4	--	--	5.59	1.10	1.86	20	--	1.0	1	----	---	48	SW	29	--	--	--	----	20
Seattle	14	1016.9	1017.6	--	--	----	----	--	--	--	--	--	--	31	72	----	----	----	--	--	----	--	5.8	S	--	---	--	--	--	--	----	--
Seattle-Tacoma	386	1003.7	1017.9	43	35	38.9	1.7	61	31	25	3+	0	12	32	79	5.48	.75	1.65	19	0	2.2	1	8.2	ESE	*35	S	29	3	3	25	8.5	--
Spokane	2357	950.2	1021.7	27	14	20.5	-4.4	46	30+	-3	18+	0	30	18	87	1.05	-.67	.24	12	0	8.3	8	6.6	NE	*20	SSW	26	5	2	24	8.0	25
Stampede Pass (R)	3958	877.8	1020.4	26	19	22.2	-1.5	40	30	8	19+	0	31	--	--	4.37	-8.68	.86	22	0	37.3	37	----	---	--	---	--	2	2	27	9.0	--
Tatoosh (R)	101	1012.5	1015.5	45	40	42.4	.4	57	31	34	9+	0	0	36	80	9.70	-.49	3.16	22	0	T	T	20.0	E	65	E	20	2	0	29	9.1	14
Walla Walla (U)	949	984.4	1022.0	33	21	27.0	-5.0	63	29	8	19+	0	27	--	--	1.15	-.53	.35	12	0	13.5	8	3.7 ⊛	S	29	SE	28	1	4	26	8.9	37
Yakima	1061	982.1	1022.8	32	12	22.2	-4.7	50	30	-6	18	0	31	19	86	.89	-.07	.45	11	0	7.6	5	3.5	WNW	*30	SSW	29	3	7	21	8.0	--
WEST INDIES																																
San Juan, P.R. (U)	47	------	------	82	71	76.9	2.0	88	31	69	21+	0	0	--	--	.74	-3.95	.33	8	1	.0	0	----	---	--	---	—	--	--	--	----	--
San Juan, P.R.	15	1014.0	1017.0	85	67	75.9	1.7	88	31+	62	9	0	0	69	83	.94	-4.83	.30	8	0	.0	0	6.1	ENE	20	NE	8	11	18	2	4.5	79
Swan Island	31	1014.4	------	82	75	78.6	.7	85	10	70	31	0	0	--	--	2.64	-1.10	1.26	11	--	.0	0	----	---	--	---	--	--	--	--	6.3	--
WEST VIRGINIA																																
Charleston	950	983.2	1019.7	45	30	37.6	1.2	65	13+	13	22	0	17	28	67	3.29	-.70	1.07	15	1	3.7	2	7.8	WSW	*23	WNW	15+	2	4	25	8.6	--
Huntington (U)	565	------	------	46	32	38.8	.8	68	12	15	22	0	17	--	--	2.36	-1.25	.84	10	--	2.1	2	----	---	--	---	--	--	--	--	----	--
Parkersburg (U)	615	------	------	44	29	36.4	2.0	63	12	12	22	0	19	--	--	2.94	-.23	1.25	13	0	1.2	1	6.3	---	29	NW	3	3	5	23	8.3	24
WISCONSIN																																
Green Bay	689	994.9	1018.5	28	14	21.0	4.9	38	7+	-3	5+	0	29	18	86	1.04	-.25	.71	9	0	4.4	2	13.6	WNW	47	SW	6	5	7	19	7.3	31
La Crosse	652	993.6	1019.7	28	15	21.3	5.6	43	7	-9	5+	0	29	15	73	.78	-.44	.45	6	0	4.6	3	10.4	NW	*28	WNW	8	7	5	19	7.0	--
Madison	857	982.1	1019.2	28	14	21.1	2.0	42	12+	-5	21	0	29	15	76	2.19	.88	1.27	10	0	9.0	[illegible]	10.1	WNW	32	NE	15	5	7	19	7.5	35
Milwaukee	672	992.9	1019.1	31	18	24.1	2.2	43	12	2	21	0	28	19	80	4.04	2.46	1.71	11	1	19.4	15	10.9	WNW	37	N	15	5	8	18	7.5	37

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No of days				
												No. of days							No. of days		Snow, Sleet				Fastest mile			(sunrise to sunset)				
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F	°F.	°F.	°F.		°F.				°F	%	In.	In.	In			In.	In.	M p. h.		M p. h.			0–3	4–7	8–10	0–10	%
WYOMING																																
Casper	5319	835.4	1018.8	31	13	22.1	-0.2	45	29+	-11	2	0	31	14	68	0.71	0.02	0.34	7	0	10.8	5	14.9	SW	*32	SW	29+	4	5	22	7.9	--
Cheyenne	6131	808.3	1018.2	36	15	25.6	.1	61	30	-4	19	0	30	13	61	.17	-.39	.07	5	0	2.8	2	14.7	WNW	40	W	26	6	9	16	6.7	53
Lander	5563	833.7	1021.0	29	7	18.0	1.2	47	10	-20	20	0	31	8	69	.72	.22	.33	6	0	12.7	12	5.4	⊛ SE	38	SW	8	6	13	12	6.5	64
Sheridan	3942	883.8	1020.3	33	11	22.1	2.0	49	11	-11	3	0	31	15	75	.16	-.59	.06	6	0	3.1	2	6.7	WNW	40	NW	6	6	6	19	7.0	63

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations – Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

ø Sun below horizon Jan. 1-16, inclusive.

⊛ Wind direction to 8 compass points only.

¢ City Office Data

† Airport Data

‡ Peak Gust

⊕ Sun below horizon Jan. 1-24, inclusive.

HEATING DEGREE DAYS

(Base 65°F.)

JANUARY 1960

State and station	Current season		Long term mean July through this month
	This month	Period July through this month	
ALABAMA			
Birmingham	622	1674	1753
Mobile	482	1204	1039
Montgomery	541	1416	1381
ARIZONA			
Flagstaff	1303	4010	4198
Phoenix (U)	470	880	980
Phoenix	506	993	1119
Prescott	1052	2634	2641
Tucson	556	1206	1123
Winslow	1142	2951	2904
Yuma	362	643	682
ARKANSAS			
Ft. Smith	785	2121	2048
Little Rock	733	1944	1898
Texarkana	648	1690	1513
CALIFORNIA			
Bakersfield	492	1215	1380
Bishop	979	2464	2515
Blue Canyon	983	2458	2899
Burbank	417	721	976
Eureka (U)	505	2506	2585
Fresno	556	1479	1640
Los Angeles (U)	319	489	779
Los Angeles	357	574	1075
Mt. Shasta (R)	981	3055	3324
Oakland	497	1363	1790
Red Bluff	645	1447	1559
Sacramento (U)	542	1350	1594
Sacramento	572	1503	1714
Sandberg (R)	882	2171	2184
San Diego	309	493	813
San Francisco (U)	425	1307	1709
San Francisco	482	1325	1890
San Jose (U)	450	1117	1348
Santa Maria	482	1279	1566
COLORADO			
Alamosa	1719	5097	5112
Colorado Springs	1141	3761	3513
Denver	1151	3557	3489
Grand Junction	1183	3515	3564
Pueblo	1282	3595	3383
CONNECTICUT			
Bridgeport	1035	2863	3169
Hartford	1203	3497	3458
New Haven	1048	3004	3276
DELAWARE			
Wilmington	920	2658	2824
DIST. OF COLUMBIA			
Washington (U)	823	2340	2488
Washington	824	2296	2523
FLORIDA			
Apalachicola (U)	358	870	827
Daytona Beach	244	424	533
Fort Myers	125	256	250
Jacksonville	312	794	804
Key West	43	65	46
Miami	85	141	118
Miami Beach	60	84	80
Orlando	175	398	410
Pensacola (U)	431	1029	912
Tallahassee	400	990	991
Tampa	170	373	424
West Palm Beach	101	181	154
GEORGIA			
Athens	668	1852	1738
Atlanta	636	1736	1757
Augusta	588	1534	1356
Columbus	552	1472	1514
Macon	528	1409	1321
Rome	699	1982	1956
Savannah	473	1227	1099
IDAHO			
Boise	1667	4419	3509
Lewiston	1188	3650	3307
Pocatello	1419	4308	4060
ILLINOIS			
Cairo (U)	820	2162	2321
Chicago	1137	3442	3595
Moline	1212	3713	3730
Peoria	1171	3543	3563
Springfield	1082	3213	3359
INDIANA			
Evansville	874	2689	2654
Ft. Wayne	1128	3449	3582
Indianapolis	1020	3218	3263
South Bend	1160	3562	3694
IOWA			
Burlington	1203	3614	3605
Des Moines	1352	3953	3802
Dubuque	1376	4281	4215
Sioux City	1464	4210	4156
KANSAS			
Concordia (U)	1244	3388	3192
KANSAS (Cont'd.)			
Dodge City	1112	3169	3027
Goodland	1233	3758	3676
Topeka	1136	3252	3152
Wichita	1050	2886	2786
KENTUCKY			
Lexington	893	2655	2892
Louisville	830	2495	2666
LOUISIANA			
Baton Rouge	468	1119	1039
Lake Charles	473	1131	1009
New Orleans (U)	390	908	770
New Orleans	419	971	848
Shreveport	598	1564	1398
MAINE			
Caribou	1640	5209	5663
Greenville (U)	1610	5010	
Portland	1273	3891	4220
MARYLAND			
Blatimore (U)	841	2303	2417
Baltimore	891	2603	2773
Frederick	956	2894	2842
MASSACHUSETTS			
Blue Hill Obs. (R)	1163	3435	
Boston	1048	2948	3128
Nantucket	986	2810	3098
Pittsfield	1318	3992	4291
MICHIGAN			
Alpena	1366	4463	4320
Detroit	1110	3388	3536
Detroit (Willow Run)	1136	3475	3614
Escanaba (U)	1371	4483	4686
Grand Rapids	1175	3718	3927
Lansing	1201	3809	
Marquette (U)	1349	4557	4602
Muskegon	1158	3721	3836
S. Ste. Marie	1444	4960	5162
MINNESOTA			
Duluth	1685	5551	5600
Internat. Falls	1845	6059	6145
Minneapolis	1467	4516	4577
Rochester	1414	4572	4716
St. Cloud	1639	5091	5173
MISSISSIPPI			
Jackson	606	1587	1417
Meridian	611	1616	1517
Vicksburg (U)	591	1514	1282
MISSOURI			
Columbia	1033	3046	3064
Kansas City	1049	2914	2960
St. Joseph	1169	3347	3223
St. Louis (U)	940	2695	2686
St. Louis	970	2827	2822
Springfield	933	2813	2842
MONTANA			
Billings	1291	4084	4072
Glasgow	1732	5288	5141
Great Falls	1301	4270	4270
Havre (U)	1512	4727	4811
Helena	1522	4966	4818
Kalispell	1568	5432	4720
Miles City	1467	4612	4584
Missoula	1494	4952	4684
NEBRASKA			
Grand Island	1445	4010	3761
Lincoln (U)	1344	3671	3490
Norfolk	1526	4316	4161
North Platte	1400	4233	3852
Omaha	1370	3904	3675
Scottsbluff	1265	4101	3925
Valentine	1348	4413	4091
NEVADA			
Elko	1372	4451	4241
Ely	1418	4516	4232
Las Vegas	736	1660	1622
Reno	1156	3707	3474
Tonopah	1115	3130	3323
Winnemucca	1238	4126	3765
NEW HAMPSHIRE			
Concord	1287	3861	4299
Mt. Washington Obs.	1797	7070	
NEW JERSEY			
Atlantic City (U)	865	2418	2502
Newark	940	2622	2951
Trenton (U)	932	2669	2856
NEW MEXICO			
Albuquerque	897	2618	2727
Clayton	1052	3177	2986
Roswell	848	2629	2202
NEW YORK			
Albany	1307	3750	3901
Binghamton	1210	3727	4193
NEW YORK (Cont'd.)			
Buffalo	1188	3377	3695
New York (U)	941	2625	2766
New York	937	2546	2724
Rochester	1244	3638	3765
Schenectady	1246	3528	3965
Syracuse	1241	3584	3594
NORTH CAROLINA			
Asheville (U)	800	2363	2427
Cape Hatteras (R)	570	1318	1315
Charlotte	691	1901	1978
Greensboro	776	2284	2319
Raleigh	721	2073	2036
Wilmington	584	1498	1402
Winston-Salem	767	2197	2255
NORTH DAKOTA			
Bismarck	1668	5160	5254
Devils Lake (U)	1903	5884	5769
Fargo	1762	5284	5399
Grand Forks	1839	5669	
Pembina	1867	5753	
Williston (U)	1695	5225	5271
OHIO			
Akron	1075	3363	3464
Cincinnati (U)	916	2650	2653
Cincinnati	937	2833	3028
Cleveland	1037	3126	3313
Columbus	950	2984	3233
Dayton	1021	3135	3222
Sandusky (U)	1085	3193	3238
Toledo	1113	3563	3573
Youngstown	1081	3421	3437
OKLAHOMA			
Oklahoma City	880	2394	2282
Tulsa	858	2274	2238
OREGON			
Astoria	756	2938	2733
Burns (U)	1304	4221	4103
Eugene	834	2723	2770
Meacham	1264	4495	4348
Medford	786	2791	2711
Pendleton	1221	3527	3161
Portland (U)	853	2469	2418
Portland	910	2876	2673
Roseburg	754	2613	
Salem	873	2801	2640
Sexton Summit (R)	1010	3472	3278
PENNSYLVANIA			
Allentown	1031	3056	3337
Harrisburg	961	2878	3022
Philadelphia (U)	868	2414	2557
Philadelphia	947	2628	2777
Pittsburgh (U)	910	2718	2882
Pittsburgh	1055	3206	3384
Reading (U)	932	2714	2888
Scranton	1109	3401	3413
Williamsport	1042	3232	3382
RHODE ISLAND			
Block Island	984	2760	2989
Providence	1106	3153	3346
SOUTH CAROLINA			
Charleston (U)	460	1147	1103
Charleston	483	1265	1250
Columbia	603	1602	1544
Florence	584	1517	1603
Greenville	680	1916	1873
Spartanburg	685	1924	1881
SOUTH DAKOTA			
Huron	1634	4778	4626
Pierre	1529	4593	
Rapid City	1266	4221	4219
Sioux Falls	1572	4684	4637
TENNESSEE			
Bristol	822	2420	2506
Chattanooga	709	2045	2105
Knoxville	744	2134	2214
Memphis	713	1973	1973
Nashville	769	2200	2150
TEXAS			
Abilene	639	1803	1721
Amarillo	1033	2819	2651
Austin	492	1271	1130
Brownsville	173	452	437
Corpus Christi	299	747	695
Dallas	628	1584	1477
Del Rio (U)	419	1142	
El Paso	691	1736	1756
Ft. Worth	643	1631	1512
Galveston (U)	384	895	758
Galveston	404	960	780
Houston (U)	404	974	843
Houston	416	1038	903
Laredo	305	693	576
Lubbock	846	2404	2256
Midland	666	1875	
Port Arthur	454	1127	993
San Angelo	576	1678	1410
TEXAS (Cont'd.)			
San Antonio	467	1204	1062
Victoria	377	939	760
Waco	561	1458	1311
Wichita Falls	744	1980	1937
UTAH			
Milford	1358	3938	3828
Salt Lake City	1212	3762	3473
VERMONT			
Burlington	1497	4309	4385
VIRGINIA			
Lynchburg	837	2423	2471
Norfolk	714	1901	1986
Richmond	807	2307	2360
Roanoke	829	2431	2472
WASHINGTON			
Olympia	879	3235	3122
Seattle (U)	701	2462	2529
Seattle-Tacoma	804	2949	3025
Spokane	1374	4515	3993
Stampede Pass (R)	1321	5425	5111
Tatoosh Island (R)	690	3134	3193
Walla Walla (U)	1171	3320	2989
Yakima	1318	3945	3657
WEST VIRGINIA			
Charleston	845	2532	2607
Huntington (U)	807	2411	2434
Parkersburg (U)	880	2695	2773
WISCONSIN			
Green Bay	1359	4519	4641
La Crosse	1349	4293	4459
Madison	1355	4239	4269
Milwaukee	1259	3976	3999
WYOMING			
Casper	1318	4411	4345
Cheyenne	1214	4155	4137
Lander	1450	4744	4833
Sheridan	1320	4544	4505
ALASKA			
Anchorage	1482	6247	6419
Annette	894	3891	3964
Barrow	2792	11938	10875
Barter Island	2866	12058	
Bethel	1800	7858	7363
Cold Bay	1013	5263	
Cordova	1283	5384	5430
Fairbanks	2134	8699	8693
Juneau	1146	4982	5169
King Salmon	1278	6390	
Kotzebue	2169	9312	8850
McGrath	2075	8758	8663
Nome	1846	8305	7808
St. Paul	1147	5724	5753
Yakutat	1185	5047	5265

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

JANUARY 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS
Alabama																										0	0	3	0
Arizona										0	0	4	0																
Arkansas	1	1	0	0	3																								
California														0	0	3	0												
Colorado																		0	0	3	0								
Connecticut										0	0	5	0																
Idaho																						1	0	0	0				
Iowa																		0	0	4	0	0	0	4	0				
Kansas																		7	9	5	0	S	S	S	S	1	19		
Louisiana	1	1	0	0	4																								
Massachusetts										0	[illegible]	6	0													0	0	5	0
Missouri	1	1	0	0	4																								
Nebraska																		9	0	4	0	0	0	5	0				
New Mexico										0	0	4	0																
New York										0	0	3	0					6	10	4	0	9	144	5	0				
North Dakota										0		3	0					1		4	0								
Oklahoma	1	1	0	0	3					0	3	4	0																
Oregon										0	0	5	1	0	0	3	1	6	L	5	2	S	S	S	S				
Rhode Island										0	0	5	0																
South Carolina										0	0	4	0																
Tennessee																		0	0	3	0								
Texas	4	2	0	4	5					0	0	4	0																
Utah																										2	8	0	0
Washington												5	0							4				4	0				
Wisconsin																										0	0	5	0

L Large number.
S Included with Snow Storms And Blizzards.
‡ Includes heavy sleet storm.
# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

JANUARY 1960

Record flooding occurred during January on the Fox River in northern Illinois from ice jams. The crest of 36.9 feet at Dayton, Ill., was 24.9 feet above flood stage and the highest stage at this point since January 1952. Flooding reported elsewhere was mostly light.

ST. LAWRENCE DRAINAGE

Lake Erie.--Minor flooding occurred on the St. Marys River at Decatur, Ind., on the 16th and on the St. Joseph River at Montpelier, Ohio, between the 13th and 19th. The Maumee River at Ft. Wayne, Ind., exceeded flood stage by 0.4 foot on the 14th. Little or no damage resulted from this flooding.

Lake Ontario.--Ice jams caused some local flooding on small streams in New York on the 13th. Some dynamiting of these jams was done as a precautionary measure.

ATLANTIC SLOPE DRAINAGE

Near bankfull stage occurred on the Housatonic River at Gaylordsville, Conn., on the 4th from rainfall on the 3d averaging generally over 1 inch and locally near 2 inches in the Berkshires. Temperature rose into the 40's and 50's on the 3d causing 6 to 7 inches of snowmelt.

Light lowland flooding occurred on the Neuse and Cape Fear Rivers from rainfall averaging 1 to 2 inches on the 5th and 7th. Additional moderate to heavy rainfall, averaging 2 to 3 inches, over the Neuse and Cape Fear Rivers on the 30 and 31st caused sharp rises and flooding on all streams in eastern North Carolina during the first week in February.

Rainfall averaging about 1.5 inches on the 5th to the 7th over the Rocky Basin caused moderate flooding at Norwood, N. C., on the 7th and 8th. The crest was about 7 feet above flood stage. Minor flooding occurred on the Pee Dee River at Cheraw, S. C., on the 8th and 9th and at Peedee, S. C., from the 7th to the 17th. The rainfall totalled 1-1/4 inches over the northern portion of South Carolina on the 6th and 7th and caused light flooding on the Saluda and Broad Rivers. Very light flooding occurred on the lowest swampland along the Edisto River. Rains totalling up to nearly 4 inches from the 29th to the 31st caused severe extensive flooding on the Rocky River at Norwood, N. C., and streams in South Carolina. Shallow flooding occurred along the coast by sea water at time of high tide on the 30th and 31st.

The flooding on the Savannah River at Clyo, Ga., beginning on the 9th and continuing through the end of the month was due to heavy rainfall from the 2d to the 7th. The rainfall averaged 2.5 inches in the upper portion of the Savannah Drainage, about 4 inches in the middle portion, and about 2 inches in the Augusta, Ga., area. During the last 5 days of the month the precipitation ranged from 3.5 inches in the upper portion to 5.5 inches in the Augusta area.

The Oconee River exceeded flood stage at Milledgeville, Ga., on the 31st, due to heavy rain during the last 5 days of the month.

EAST GULF OF MEXICO DRAINAGE

Brief periods of heavy rain from the 15th to the 18th caused the Apalachicola River to exceed flood stage at Blountstown, Fla., on the 21st and 22d. No damages resulted.

Light rains on the 1st, 2d, and 3d followed by heavier rains on the 6th and 7th caused minor rises at all stations on the Warrior and Tombigbee Rivers in Alabama and Mississippi. Heavier rains, in some cases as much as 2 inches, occurred near the end of the month, and caused minor flooding on the entire Tombigbee River System.

The light flooding on the Pearl River at Jackson, Miss., and in the reach from Bogalusa, La., to Pearl River, La., was due to frequent heavy rains during the month.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--The mean stage of the Mississippi River at Minneapolis, Minn., was 0.8 foot below the long-term mean, 0.3 foot above at St. Paul, and 0.7 foot above at La Crosse, Wis. The Wisconsin River continued at an exceptionally high winter flow with a mean stage at Portage, Wis., of 14.1 feet, 2.9 feet above the long-term mean. This is the highest mean stage at Portage since the beginning of continuous winter records in 1933. The heavy rainfall in late December over the Wisconsin Valley began to show its effects at Portage, Wis., with a stage of 16.4 feet on the 6th, 0.6 foot below flood stage and further downstream at Muscoda, Wis., on the 13th with a stage of 8.0 feet, 1 foot below flood stage. An additional rise at Muscoda, due to ice action, occurred on the 18th with a stage of 8.3 feet.

Although Mississippi River nagivation was officially closed, navigation was not entirely closed. For the first time in modern history, a tug has daily defied the icy grip of Minnesota's winter by pushing barges 16 miles up and down the Mississippi between St. Paul, Minn., and Pine Bend. The lack of sub-zero temperatures and of continued periods of cold has helped to keep the river open as well as the daily breakup of the ice accumulation by the tug. To date Minneapolis-St. Paul have had only 4 days of 0°F or colder, normal occurrences are 18.

A comparison of snow depths in the upper Mississippi Basin on January 31 with that of other years is given in the following table:

COMPARATIVE SNOW DEPTHS (INCHES)

Station	1960	1959	1958	1957	1956	1955
(Minnesota)						
Bemidji	8	8	5	11	26	8
International Falls	8	20	8	11	22	15
Duluth	16	11	11	14	29	17
Alexandria	5	0	5	2	16	6
New Ulm	1	2	3	T	6	4
Minneapolis	2	0	2	2	11	6
Rochester	2	3	2	1	10	3
(Wisconsin)						
Park Falls	14	12	12	13	21	17
Wausaw	4	6	5	7	12	--
Portage	2	10	4	4	2	--

The Turkey and Maquoketa Rivers in Iowa and the Pecatonica and Rock Rivers in Wisconsin and Illinois rose above flood stage near the middle of the month, with the most severe and prolonged flooding occurring in the Pecatonica and Rock Basins. Not since 1946 has there been flooding in January.

There was no snowmelt involved. On the 12th and 13th, 2- to 4-inch rains fell on bare frozen ground. An additional 1 to 1.5 inches of rain and snow fell over the same area on the 15th. Although the flooding was extensive, flood damage was at a minimum due to the season. Considerable farmland was inundated, but there were no crops nor livestock losses. Most damage was to homes and summer cottages along the rivers. In the Moline Bridge area, 80 families were forced to move out.

Record rainfall amounts falling on saturated soils of southern Iowa on the 11th and 12th produced flooding on the major rivers of south-central Iowa. The North, Middle, and South Rivers were above flood stages from the afternoon of the 12th through the 13th. Extensive lowland farm ground flooding occurred, but due to the time of year, damage was minor. The Des Moines River was above flood stage from Tracy to Ottumwa, Iowa, from the 13th through the 15th. Inconvenience and delay occurred to construction projects in the vicinity of Ottumwa. Lowland flooding occurred in the lower reaches of the Skunk River. Sigourney and Oskaloosa Rivers were above flood stage from the 12th through the 15th. Only minor damage occurred.

The Fox River in northern Illinois flooded during 3 periods with heavy flooding occurring during the last 10 days of the month. Ice jams in the Fox River near Dayton, Ill., about the 20th resulted in an estimated flood crest of 36.9 feet on the 25th. This was the highest stage ever observed at Dayton, Ill., the previous high being 32.0 feet in January 1952. Minor flooding occurred in the Illinois and Big Muddy River Basins in Illinois and along the main stem of the Mississippi River. Late month flooding was due to ice gorging in the main stem. Most of the flooding was due to heavy rain from the 11th to the 15th. More than 2 inches of rainfall was reported at Elgin, Ill., in 24 hours on the 11th and 12th. Except for the Fox River, damages from floods were generally negligible. Some resort cabins were flooded by the Mississippi. Extensive damage occurred during the last Fox River flood to residences, bridges, and piers.

Missouri Basin.--Ice jams formed near the confluence of the Jefferson, Madison, and Gallatin Rivers on the 21st to the 23d, causing some inundation of lowlands near and around Trident, Mont., and upstream along the Gallatin to below Logan, Mont. About 600 acres of land and 1 dwelling were flooded. Damage was negligible.

Minor flooding occurred on the Black Vermillion River at Frankfort, Kans., on the 13th and 15th. Unofficial rainfall of 3 inches at Winifred, Kans., on the 12th appears to have been largely instrumental in developing the primary overflow on the 13th. A secondary rise on the 15th was preceded by additional rains of 1/2 to 1-1/2 inches.

The One Hundred Two River exceeded the previous record of 16.5 feet reached at Maryville, Mo., in 1926 and 1947 by 1 foot. The water was held within the levee system in the Maryville Area, but flooding was extensive in some areas where commuters were almost isolated. The flooding on the Platte Basin in Missouri was extensive but less severe. On the Grand River equal flooding had occurred previously during the past season so little additional damage resulted. This flooding was due to rainfall totalling 3 inches from the 12th through the 15th.

Ohio Basin.--Light flooding occurred on Paint Creek at Bourneville, Ohio, on the 15th and on the Scioto River at La Rue and Piketon, Ohio, from the 14th to the 16th. A moderate rise was recorded at other points along the Scioto and the upper half of the Sandusky River. The flooding was confined to fields not in use at this season and no damage resulted.

Minor flooding occurred on the Salt River at Taylorsville, Ky., on the 15th due to moderate to heavy rain on the 14th. No damage was reported.

The minor flooding on the Wabash River at Wabash and Lafayette, Ind., between the 15th and 17th was due to rainfall that totalled about 1 inch during the period from the 12th to the 15th. No damage resulted.

Moderate rains on the 15th produced minor overflow along the Skillet Fork and the Saline Rivers in Illinois between the 15th and 18th. Little or no damage resulted.

Arkansas Basin.--Minor flooding occurred on the Deep Fork River near Dewar, Okla., on the 13th. Another rise occurred on the 15th when it reached a stage of 17.95 feet (flood stage 18 feet). No damage occurred from the minor overflow.

Red Basin.--Moderate to heavy rains over the Ouachita River Basin from the 13th to the 15th caused a sharp rise at Camden, Ark., to a crest of 29.7 feet on the 20th, 3.7 feet above flood stage. Damage from this flooding was negligible.

The flooding on the Sulphur River at Naples, Tex., from the 6th to the 25th was due to general rains over the basin from the 1st through the 6th and again from the 12th through the 17th. Damage was slight and indeterminable, since much of the area is devoted to grazing and to oil and gas interests.

WEST GULF OF MEXICO DRAINAGE

General showers over the Calcasieu Basin on the 4th and 5th caused minor flooding at Hineston, La., on the 7th and 8th. The rainfall averaged almost 2 inches over the upper and middle portions of the basin. Heavy rains occurred again on the 16th causing another rise at Hineston to slightly above flood stage. The rainfall was the heaviest over the upper basin where slightly over 2 inches were recorded.

The flooding on the Sabine River above Logansport, La., in the beginning of the month was due to heavy rains in December. General rain from the 1st through the 6th and from the 12th through the 17th caused additional flooding along the Sabine River. Damage from the flooding, if any, was very light.

Generally moderate rains of 1.5 to 2 inches during the period from the 4th to the 6th caused flooding along the Trinity River in Texas beginning at Dallas and Rosser, Tex., on the 6th. The crests averaged 3 to 4 feet above flood stage at Rosser and below, but with all the flooding within levees. No appreciable damage resulted from this flood.

Moderate rains over the western portions of the Navidad Basin during the last day of December and January 1 caused a stage slightly above flood stage at Ganado, Tex., on the morning of the 2d. No damage resulted.

Colorado River Basin.--Minor flooding occurred on the Gila River in the Solomon, Ariz., area on the 12th due to rains and rapid snowmelt. The flooding was confined to fields immediately adjacent to the river. No damage was reported.

PACIFIC SLOPE DRAINAGE

Columbia Basin.--With the exception of two mild spells on the 5th and near the end of the month, January weather over the Columbia Basin was cold. Freezing levels were at or near the surface during most of the month.

Precipitation fell mostly in the form of snow except along the coast, as Pacific storms moved through the Columbia Basin from the southwest. A mean ridge aloft over the Pacific Northwest tended to decrease precipitation amounts sharply from the coast inland.

The Willamette River had the lowest flows of record for the period October through January.

No important rises were noted in the Columbia Basin. The warming trend toward the end of the month brought only slight responses over the basin.

PUGET SOUND DRAINAGE

Locally heavy rains on the Washington Coastal Drainage area on the 29th caused sharp rises in the Snohomish and Snoqualmie Rivers in Washington. Minor flooding occurred on the Snoqualmie River at Carnation, Wash., on the 29th. The Snohomish River approached within 0.53 foot of flood stage at Snohomish, Wash. No damages were reported.

FLOOD STAGE DATA

(All dates in January unless otherwise specified)

JANUARY 1960

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
ST. LAWRENCE DRAINAGE	Ft.			Ft.	
Lake Erie					
St. Marys: Decatur, Ind.	13	16	16	13.1	16
St. Joseph: Montpelier, Ohio	10	13	19	13.4	15
Maumee: Ft. Wayne, Ind.	15	14	14	15.4	14
ATLANTIC SLOPE DRAINAGE					
Neuse: Smithfield, N. C.	13	8	10	15.3	9
Goldsboro, N. C.	14	8	16	17.5	12
Kingston, N. C.	14	9	18	15.4	15
Cape Fear: Elizabethtown, N. C.	20	8	12	25.7	10
Rocky: Norwood, N. C.	16	7	8	E23.0	7-8
		30	Feb. 2	29.3	Feb. 2
Pee Dee: Cheraw, S. C.	30	8	9	31.5	8
Peedee, S. C.	19	7	17	21.8	13
Saluda: Pelzer, S. C.	6	31	1/		
Chappells, S. C.	13	7	8	14.1	7
		31	1/	15.9	31
Broad: Blair, S. C.	14	7	8	15.5	8
		30	1/		
North Fork: Orangeburg, S. C.	8	30	1/		
Edisto: Givhans, S. C.	10	Dec. 20	2	12.4	Dec. 26-27
		14	22	10.2	15
Savannah: Clyo, Ga.	11	9	1/	13.1	18-20
Oconee: Milledgeville, Ga.	20	31	1/	25.9	31
EAST GULF OF MEXICO DRAINAGE					
Apalachicola: Blountstown, Fla.	15	21	22	15.7	22
Tombigbee: Amory, Miss.	20	30	30	20.2	30
Macon, Miss.	20	30	1/		
Tibbie, Miss.	23	30	1/		
Lock 3,Whitfield, Ala.	33	8	12	38.6	10
		30	1/		
Pearl: Jackson, Miss.	18	7	16	21.2	8
		18	26	21.0	22
Bogalusa, La.	15	7	31	16.7	10
				17.4	22
Pearl River, La.	12	21	26	12.6	24
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Turkey: Garber, Iowa	11	12	13	13.45	13
Maquoketa: Maquoketa, Iowa	13	13	15	18.8	13
East Branch: Blanchardville, Wis.	11	13	13	14.1	13
Pecatonica: Darlington, Wis.	11	13	14	15.3	13
Martintown, Wis.	11	12	20	18.4	15
Freeport, Ill.	13	13	20	14.8	16
Shirland, Ill.	10	13	25	14.8	15,16
Rock: Rockton, Ill.	10	13	18	10.6	15
Joslin, Ill.	14	15	17	14.5	16
Moline, Ill.	13	24	Feb. 7	14.3	31
Iowa: Wapello, Iowa	10	14	18	12.6	16
Skunk: Sigourney, Iowa	16	12	15	21.5	15
Oskaloosa, Iowa	15	12	15	17.2	14
Augusta, Iowa	15	13	19	17.2	16
North: Norwalk, Iowa	14	12	13	19.8	13
Middle: Indianola, Iowa	15	12	13	19.4	13
South: Ackworth, Iowa	15	12	13	21.3	13
Des Moines: Tracy, Iowa	14	13	15	16.7	14
Eddyville, Iowa	15	13	15	19.0	14
Ottumwa, Iowa	9	13	15	11.6	14
Fox: Dayton, Ill.	12	7	7	12.2	7
		11	15	E14.5	12
		20	1	E36.9	25
Illinois: Morris, Ill.	13	13	13	13.1	13
LaSalle, Ill.	20	13	17	21.9	14
Big Muddy: Murphysboro, Ill.	16	16	23	18.3	19

River and station	Flood stage	Above flood stages -dates		Crest*	
		From–	To–	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Upper Mississippi Basin (Cont'd.)					
Mississippi: Keithsburg, Ill.	12	15	17	12.5	16
		24	27	12.4	25
Gregory Landing, Mo.	15	15	17	15.5	16
Quincy, Ill.	17	16	19	17.8	17
Hannibal, Mo.	16	15	19	17.4	17
Louisiana, Mo.	15	16	19	16.2	18
		27	30	15.1	29
Clarksville, Mo.	23	15	20	26.3	18
Winfield, Mo.	23	15	21	26.2	19
Missouri Basin					
Black Vermillion: Frankfort,Kans.	19	13	13	22.55	13
		15	15	20.60	15
Tarkio: Fairfax, Mo.	17	13	13	17.35	12
One Hundred Two: Maryville, Mo.	14	13	15	17.5	13
Platte: Agency, Mo.	20	14	17	23.25	16
Grand: Pattonsburg, Mo.	25	13	13	25.2	13
Chillicothe, Mo.	24	13	17	28.4	16
Sumner, Mo.	26	13	19	32.6	17
Ohio Basin					
Paint Creek: Bourneville, Ohio	10	15	15	12.1	15
Scioto: LaRue, Ohio	11	14	16	11.35	16
Piketon, Ohio	16	16	16	18.2	16
Skillet Fork: Wayne City, Ill.	15	15	16	16.8	15
Wabash: Wabash, Ind.	12	15	15	12.1	15
Lafayette, Ind.	11	16	17	11.9	17
Saline: Harrisburg, Ill.	13	14	18	18.6	16
Arkansas Basin					
Deep Fork: Dewar, Okla.	18	13	13	18.35	13
Red Basin					
Ouachita: Camden, Ark.	26	17	23	29.7	20
Sulphur: Naples, Tex.	22	6	25	27.05	11
WEST GULF OF MEXICO DRAINAGE					
Calcasieu: Hineston, La.	12	7	8	12.1	7
		19	20	12.2	19
Lake Fork: Quitman, Tex.	16	7	8	16.45	7
Sabine: Mineola, Tex.	14	2	24	17.6	11
Gladewater, Tex.	26	Dec. 21	1	34.7	Dec. 24
		10	29	32.7	16
Logansport, La.	25	8	8	25.0	8
Deweyville, Tex.	14	17	21	14.1	20
East Fork: Rockwall, Tex.	10	1	3	10.4	1
		5	6	10.6	6
		14	15	10.0	14
		17	18	10.3	18
Trinity: Dallas, Tex.	30	6	6	30.85	6
Rosser, Tex.	26	6	9	29.5	8
Trinidad, Tex.	28	8	21	32.0	11
Liberty, Tex.	24		1		
		9	11	24.0	10
		15	31	26.65	22
Navidad: Ganado, Tex.	21	2	2	21.65	2
PACIFIC SLOPE DRAINAGE					
Snoqualmie: Carnation, Wash.	51	29	29	51.2	29

* Tentative
E Estimated
1/ Continued at end of month

RAWINSONDE DATA

Average monthly values

ALBANY, N. Y. (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	86	-7.8	80	297	4.5
1,000	31	138			308	5.2
950	31	537	-6.5	72	290	9.1
900	31	961	-6.9	66	295	14.6
850	31	1,407	-7.7	65	300	18.3
800	31	1,878	-9.2	64	298	20.4
750	31	2,377	-11.0	61	295	23.1
700	31	2,904	-12.6	53	290	26.8
650	30	3,471	-14.6	47	291	31.3
600	30	4,073	-17.2	41	289	36.7
550	30	4,718	-21.2	40	287	40.2
500	30	5,418	-25.4		287	41.4
450	30	6,170	-30.7		287	45.7
400	30	7,001	-36.5		286	52.8
350	30	7,916	-42.2		285	59.1
300	30	8,945	-48.2		285	62.6
250	30	10,131	-53.8		285	58.7
200	30	11,554	-56.0		286	53.8
175	29	12,406	-55.3		289	51.9
150	29	13,390	-54.8		281	47.0
125	29	14,555	-55.8		281	44.5
100	29	15,973	-56.5		279	42.2
80	29	17,382	-58.1		275	38.1
60	29	19,192	-58.0		275	34.4
50	29	20,342	-57.4		271	28.8
40	29	21,753	-56.6		264	29.1
30	29	23,583	-54.8		259	32.1
25	28	24,743	-53.7		260	36.1
20	28	26,182	-52.1		255	36.3
15	27	28,063	-49.5		254	44.3
10	21	30,717	-44.9		258	59.3
7	10	33,039	-42.3			
5	5	35,310	-39.5			

ALBUQUERQUE, N. MEX. (839 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,619	-3.7	67	9	3.1
1,000	31	203				
950	31	619				
900	31	1,056				
850	31	1,513				
800	31	1,997	-1.9	55	301	6.0
750	31	2,524	-3.8	48	295	9.5
700	31	3,055	-6.3	47	283	16.7
650	31	3,629	-8.8	40	280	20.4
600	31	4,246	-12.2	36	281	21.8
550	31	4,905	-16.3	33	280	25.1
500	31	5,619	-20.7		274	28.6
450	31	6,387	-25.6		274	25.8
400	31	7,237	-31.6		282	21.0
350	31	8,169	-38.2			
300	30	9,208	-45.2			
250	29	10,412	-53.1			
200	29	11,830	-58.1			
175	29	12,669	-58.5			
150	29	13,637	-59.2			
125	27	14,771	-61.7			
100	26	16,141	-64.5			
80	25	17,503	-64.9			
60	22	19,256	-63.9			
50	22	20,379	-62.1			
40	21	21,760	-60.7			
30	14	23,577	-56.5			
25	13	24,742	-55.2			
20	9	26,205	-54.0			
15						
10						
7						
5						

AMARILLO, TEX. (892 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,095	-1.7	76	290	5.4
1,000	31	172				
950	31	584				
900	31	1,020				
850	31	1,480	2.3	50	268	13.0
800	31	1,969	1.6	41	273	15.7
750	31	2,485	-.5	35	268	17.7
700	31	3,036	-3.4	33	266	19.4
650	31	3,613	-6.7	32	264	23.5
600	31	4,239	-10.5	33	261	27.6
550	31	4,894	-14.7		262	33.4
500	31	5,618	-19.6		264	37.5
450	31	6,385	-24.7		261	44.3
400	31	7,241	-30.7		261	49.0
350	31	8,177	-37.1		260	58.1
300	31	9,227	-44.4		260	67.2
250	30	10,432	-52.8		261	72.5
200	30	11,851	-58.5		260	76.6
175	30	12,690	-58.9		261	79.1
150	29	13,650	-59.6		260	71.9
125	28	14,786	-61.3		263	64.3
100	27	16,159	-64.8		264	56.2
80	23	17,527	-66.0		261	44.3
60	21	19,273	-64.7		261	36.3
50	18	20,383	-63.4		261	26.0
40	16	21,769	-61.6		260	24.5
30	12	23,569	-58.7		258	17.1
25	8	24,764	-56.6			
20	6	26,218	-53.3			
15						
10						
7						
5						

ANCHORAGE, ALASKA (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	30	-8.3	82	28	1.4
1,000	31	54			86	2.3
950	31	455	-4.6	71	60	1.9
900	31	882	-5.0	66	135	5.1
850	31	1,330	-6.7	65	161	8.2
800	31	1,802	-9.2	63	181	8.4
750	31	2,296	-11.4	58	199	12.4
700	31	2,826	-13.9	52	208	13.0
650	31	3,374	-17.3	50	217	13.4
600	31	3,974	-21.1	48	223	17.5
550	31	4,605	-25.4	48	227	18.5
500	31	5,296	-30.0	47	231	22.3
450	31	6,040	-34.7	52	239	23.5
400	31	6,861	-40.2		233	27.6
350	31	7,761	-45.9		230	30.1
300	31	8,774	-51.5		228	29.9
250	31	9,947	-54.8		233	29.0
200	31	11,374	-54.0		237	22.7
175	31	12,237	-51.7		237	22.3
150	31	13,240	-50.3		243	17.9
125	31	14,433	-49.4		247	14.8
100	31	15,896	-49.6		267	12.4
80	31	17,357	-49.7		277	10.3
60	30	19,255	-49.0		307	9.9
50	29	20,462	-48.6		324	9.5
40	28	21,927	-47.9		344	11.3
30	24	23,902	-45.8		18	17.9
25	22	25,126	-44.8		24	24.7
20	22	26,621	-43.8		26	29.1
15	19	28,609	-43.2		36	38.7
10	10	31,361	-43.2			
7						
5						

ANNETTE, ALASKA (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	37	1.8	84	129	8.4
1,000	31	102			83	3.5
950	31	512	1.0	69	137	4.1
900	31	950	-.8	67	151	2.9
850	31	1,405	-2.8	67	198	3.3
800	31	1,884	-5.1	65	230	3.9
750	31	2,388	-8.0	62	256	4.7
700	31	2,923	-10.7	56	272	6.6
650	31	3,485	-13.9	51	286	9.9
600	31	4,094	-17.8	47	292	7.8
550	31	4,734	-22.6	46	297	6.0
500	31	5,433	-27.7	46	278	8.4
450	31	6,174	-33.2	44	291	11.3
400	31	7,002	-39.2		294	12.4
350	31	7,905	-45.5		301	3.7
300	31	8,919	-51.6		242	1.9
250	31	10,086	-57.3		334	11.3
200	27	11,483	-57.7		343	13.6
175	25	12,327	-54.7		326	12.6
150	24	13,321	-54.4		346	15.0
125	22	14,504	-53.8		336	15.3
100	22	15,936	-54.3			
80	20	17,353	-54.2			
60	19	19,209	-53.4			
50	18	20,380	-53.2			
40	17	21,820	-52.5			
30	14	23,679	-52.8			
25	12	24,886	-52.3			
20	12	26,331	-51.6			
15	6	28,218	-51.2			
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ATHENS, GA. (991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	246	3.2	88	310	1.7
1,000	31	169				
950	31	591	5.3	68	293	6.0
900	31	1,030	4.9	63	267	8.7
850	31	1,496	4.0	56	274	14.6
800	31	1,988	2.6	52	275	19.0
750	31	2,507	.6	48	269	22.5
700	31	3,060	-1.7	44	268	28.6
650	31	3,645	-4.3	43	266	34.6
600	31	4,276	-7.6	43	266	40.6
550	31	4,943	-11.5		265	45.3
500	31	5,673	-16.1		266	50.3
450	30	6,448	-21.4		265	53.2
400	30	7,317	-27.5		267	60.6
350	30	8,264	-34.4		266	66.3
300	30	9,324	-42.7		268	70.9
250	30	10,531	-51.4		270	85.5
200	29	11,963	-57.1		272	84.5
175	28	12,800	-58.4		272	86.3
150	26	13,757	-59.0		272	76.9
125	26	14,895	-61.7		273	68.6
100	23	16,247	-65.4		270	61.0
80	16	17,586	-66.5		270	47.6
60	14	19,320	-63.3		270	28.4
50	13	20,450	-62.1		273	28.8
40	13	21,843	-58.4		270	22.5
30	13	23,669	-54.7			
25	11	24,848	-52.5		278	12.6
20	11	26,299	-49.7		272	12.2
15	11	28,199	-45.8		275	7.0
10	7	30,939	-40.5			

BARROW, ALASKA (1021 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	8	-31.5	60	90	3.7
1,000	30	157	-27.6	53	72	8.4
950	30	533	-23.3	57	71	15.5
900	30	928	-21.6	54	71	12.0
850	30	1,349	-21.2	51	66	11.1
800	30	1,797	-21.4	50	63	9.7
750	30	2,273	-22.5	46	64	8.0
700	30	2,778	-23.9	43	52	4.3
650	30	3,316	-26.2	42	3	2.7
600	30	3,893	-29.1	40	319	3.5
550	30	4,507	-32.5	40	285	5.4
500	30	5,178	-36.0		271	8.2
450	30	5,901	-40.5		268	11.3
400	30	6,699	-45.0		267	15.7
350	30	7,583	-49.1		270	17.7
300	30	8,588	-51.8		263	20.4
250	30	9,770	-51.4		265	18.3
200	29	11,232	-49.6		270	18.5
175	28	12,106	-48.8		269	18.1
150	27	13,130	-48.0		277	18.1
125	26	14,340	-48.4		283	18.3
100	26	15,809	-48.3		286	18.8
80	24	17,298	-47.6		297	19.4
60	23	19,210	-46.9		301	22.7
50	21	20,398	-47.1		299	20.8
40	18	21,944	-44.8		307	27.4
30	15	23,934	-41.7		314	31.7
25	14	25,158	-40.8		318	43.3
20	12	26,652	-39.5		320	46.6
15	8	28,740	-35.9			
10						

BARTER IS., ALASKA (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	15	-32.9	60	78	3.1
1,000	30	148	-30.0	57	92	7.2
950	30	522	-24.9	62	82	12.2
900	30	914	-21.4	61	87	11.9
850	30	1,337	-20.2	56	80	10.1
800	30	1,787	-20.0	49	77	6.0
750	30	2,262	-21.2	45	48	3.7
700	30	2,772	-23.1	45	3	4.1
650	30	3,305	-25.4	44	321	7.4
600	30	3,890	-27.9	40	302	10.1
550	30	4,502	-31.1		298	15.7
500	30	5,181	-35.3		292	23.3
450	29	5,897	-40.1		286	24.1
400	29	6,706	-45.0		279	31.1
350	29	7,590	-49.1		286	29.3
300	29	8,593	-52.2		280	29.9
250	29	9,771	-52.7		289	27.0
200	29	11,218	-50.2		284	22.0
175	27	12,095	-49.4		289	21.0
150	27	13,107	-48.9		290	21.2
125	27	14,304	-49.0		300	20.2
100	27	15,768	-49.1		295	22.2
80	24	17,261	-47.9		314	20.4
60	21	19,220	-45.2		320	17.9
50	21	20,438	-45.2		321	20.0
40	20	21,943	-44.2		324	20.2
30	19	23,875	-44.3		329	25.6
25	16	25,106	-44.6		325	23.5
20	14	26,615	-43.7		338	34.6
15	9	28,530	-43.4			
10						

BETHEL, ALASKA (998 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	-13.7	71	46	6.4
1,000	31	24			52	5.8
950	31	427	-6.8	71	77	7.8
900	31	843	-6.8	68	110	5.6
850	31	1,289	-8.3	62	141	5.4
800	31	1,758	-10.4	57	179	7.6
750	31	2,254	-13.0	56	186	10.1
700	31	2,777	-15.9	48	201	10.3
650	31	3,332	-19.2	46	193	13.0
600	31	3,923	-23.1	47	195	15.9
550	31	4,554	-27.3	46	199	14.2
500	31	5,237	-31.9	45	188	19.0
450	31	5,972	-36.8		196	23.1
400	31	6,781	-42.1		181	20.4
350	31	7,674	-47.6		157	19.4
300	31	8,682	-52.0		170	25.1
250	31	9,859	-53.0		176	15.7
200	31	11,307	-50.4		151	11.1
175	30	12,181	-49.3		171	12.8
150	30	13,195	-48.2		119	10.3
125	30	14,400	-47.5		168	8.5
100	28	15,865	-47.7		160	6.0
80	27	17,337	-47.6		187	3.3
60	23	19,286	-46.3			
50	23	20,502	-45.7			
40	21	22,016	-43.8			
30	20	23,964	-41.7			
25	17	25,211	-41.4			
20	14	26,729	-40.8			
15						
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BISMARCK, N. DAK. (957 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	505	-12.5	78	266	3.3
1,000	31	170				
950	31	565			298	5.2
900	31	980	-9.3	67	299	12.6
850	31	1,424	-7.2	59	296	16.5
800	31	1,896	-8.3	51	293	21.0
750	31	2,390	-10.2	50	294	24.5
700	31	2,925	-12.5	51	292	27.4
650	31	3,484	-15.5	50	293	32.1
600	31	4,089	-19.0	48	290	35.0
550	31	4,728	-23.0	45	291	38.3
500	31	5,425	-27.6	44	291	39.6
450	31	6,170	-32.7	42	289	38.3
400	31	6,996	-38.6		288	42.9
350	31	7,901	-45.4		284	48.4
300	31	8,914	-52.1		279	48.0
250	31	10,081	-56.6		274	47.8
200	30	11,491	-57.9		275	46.2
175	30	12,335	-57.3		273	45.7
150	30	13,312	-56.1		274	41.4
125	30	14,472	-56.4		275	37.3
100	30	15,884	-58.0		272	34.8
80	29	17,280	-59.1		271	31.5
60	25	19,070	-60.3		272	28.8
50	20	20,215	-60.1		268	26.6
40	13	21,668	-58.0		264	20.0
30	11	23,513	-58.3			
25	6	24,698	-56.3			
20	5	26,120	-56.8			
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BOISE, IDAHO (920 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	868	-6.0	86	147	5.4
1,000	31	212				
950	31	619				
900	31	1,043	-3.7	77	129	4.1
850	31	1,495	-3.8	75	163	4.9
800	31	1,974	-5.2	72	215	6.4
750	31	2,475	-7.6	69	250	10.3
700	31	3,014	-10.4	69	265	12.0
650	31	3,575	-13.6	64	268	14.2
600	31	4,186	-17.1	60	274	16.5
550	31	4,828	-21.2	57	275	22.0
500	31	5,532	-25.8	53	279	25.3
450	31	6,279	-30.9	50	285	29.1
400	31	7,112	-36.7	47	291	33.0
350	31	8,025	-43.0		301	37.9
300	31	9,049	-49.7		304	37.5
250	31	10,224	-56.5		293	38.7
200	31	11,624	-60.1		286	38.5
175	31	12,459	-59.0		283	34.4
150	30	13,423	-58.0		290	31.9
125	29	14,571	-57.8		282	30.1
100	26	15,982	-59.3		286	28.0
80	23	17,390	-59.5		287	24.5
60	20	19,202	-59.1		294	16.7
50	18	20,351	-58.7		296	15.0
40	14	21,754	-58.8		302	13.4
30	12	23,572	-58.4		329	11.5
25	10	24,720	-56.8			
20	6	26,189	-54.3			
15	5	27,995	-52.2			
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BROWNSVILLE, TEX. (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	13.6	84	27	1.9
1,000	31	163	14.8	79	123	4.7
950	31	595	13.7	75	144	7.8
900	31	1,053	12.5	64	179	8.9
850	31	1,531	10.7	60	203	12.2
800	31	2,035	9.8	53	213	14.2
750	31	2,567	8.1	46	229	15.0
700	31	3,137	5.3	38	245	16.3
650	31	3,732	1.5	36	255	19.2
600	31	4,378	-2.6		252	23.3
550	31	5,054	-6.8	34	251	26.8
500	31	5,801	-11.4	35	259	28.2
450	31	6,596	-16.4	37	263	33.2
400	31	7,478	-22.6	38	264	38.1
350	31	8,445	-29.4			
300	31	9,528	-37.7			
250	31	10,759	-47.5			
200	31	12,202	-56.7			
175	31	13,041	-60.5			
150	31	13,995	-63.7			
125	31	15,102	-68.1			
100	28	16,427	-74.1			
80	27	17,718	-76.3			
60	27	19,391	-71.8			
50	27	20,476	-68.1			
40	22	21,829	-63.1			
30	19	23,630	-58.0			
25	16	24,771	-56.2			
20	15	26,202	-52.9			
15	8	28,097	-47.2			
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5						

BUFFALO, N. Y. (995 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	182	-3.7	78	262	3.1
1,000	31	138			47	1.9
950	31	541	-4.4	76	261	8.4
900	31	967	-5.6	74	267	13.4
850	31	1,415	-6.8	66	267	17.7
800	31	1,887	-8.5	63	273	17.9
750	31	2,388	-9.8	58	277	20.4
700	31	2,918	-11.7	53	281	26.2
650	31	3,483	-13.9	50	282	30.7
600	31	4,088	-17.1	49	279	34.4
550	31	4,734	-21.0	47	282	33.8
500	31	5,434	-25.5	44	281	38.3
450	31	6,187	-30.5	40	277	42.7
400	31	7,019	-36.3	37	275	42.9
350	31	7,934	-42.2		277	44.7
300	31	8,963	-48.2		276	41.0
250	31	10,148	-54.0		280	43.5
200	31	11,572	-55.7		276	44.1
175	31	12,423	-55.6		279	41.4
150	30	13,399	-55.3		282	42.4
125	29	14,561	-56.3		277	34.6
100	27	15,975	-57.2		272	34.4
80	27	17,382	-58.4		273	31.3
60	24	19,196	-58.7		276	26.4
50	23	20,344	-58.7		273	28.2
40	22	21,748	-57.7		275	22.2
30	20	23,570	-56.8			
25	19	24,734	-55.5		267	31.7
20	18	26,171	-54.9		268	39.8
15	15	28,008	-52.8			
10	9	30,644	-48.7			
7	8	33,033	-44.2			
5	8	35,284	-41.8			

BURRWOOD, LA. (1020 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	3	10.9	90	41	6.2
1,000	30	168	12.3	80	34	6.4
950	30	599	11.5	68	336	2.1
900	30	1,051	11.0	60	251	7.8
850	30	1,527	9.8	55	258	11.5
800	30	2,029	7.9	48	263	16.1
750	30	2,557	5.9	42	265	20.4
700	30	3,123	3.5	37	260	26.4
650	30	3,719	.1	36	261	30.5
600	30	4,358	-3.7	34	262	36.1
550	30	5,037	-7.7	34	268	34.0
500	29	5,775	-12.3		262	42.2
450	29	6,566	-17.9		260	45.3
400	28	7,445	-24.4		263	41.2
350	28	8,405	-31.3	36		
300	28	9,479	-39.3			
250	28	10,702	-49.1			
200	28	12,136	-57.5			
175	28	12,976	-59.9			
150	28	13,933	-62.6			
125	27	15,044	-66.4			
100	26	16,380	-72.6			
80	19	17,687	-74.3			
60	15	19,373	-70.7			
50	14	20,471	-67.8			
40	12	21,828	-62.8			
30	12	23,621	-57.7			
25	12	24,779	-54.5			
20	11	26,223	-50.2			
15	7	28,114	-46.3			
10	5	30,846	-39.2			
7						
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CAPE HATTERAS, N. C. (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	7.2	80	330	4.3
1,000	31	150	7.8	72	316	7.6
950	31	567	6.1	65	310	7.6
900	31	1,014	4.3	57	275	8.9
850	31	1,479	2.9	57	270	17.5
800	31	1,969	1.4	47	269	24.1
750	31	2,482	-.7	41	269	27.0
700	31	3,036	-2.9	40	267	32.1
650	31	3,613	-5.7	39	267	37.1
600	31	4,244	-9.0	40	268	42.7
550	31	4,905	-12.8	41	266	48.2
500	31	5,635	-17.2	41	269	53.4
450	31	6,409	-22.3	39	270	58.3
400	31	7,274	-28.4	37	271	64.3
350	31	8,218	-35.2		269	70.3
300	31	9,275	-43.0		270	76.4
250	31	10,482	-51.5		272	82.6
200	30	11,906	-57.0		274	84.7
175	29	12,744	-57.7		274	75.4
150	29	13,716	-58.6		273	73.6
125	29	14,855	-61.3		272	78.3
100	27	16,225	-64.0		274	61.6
80	27	17,587	-66.0		272	49.7
60	25	19,347	-63.8		274	32.8
50	23	20,471	-59.7		271	26.0
40	22	21,859	-59.3		277	18.5
30	19	23,675	-55.9		277	15.7
25	16	24,833	-54.8		265	16.5
20	15	26,279	-51.9		261	17.9
15	[illegible]	28,132	-50.0			
10						
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	CARIBOU, ME. (990 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	191	-12.6	72	302	6.2
1,000	31	111				
950	31	502	-11.9	68	332	11.7
900	31	918	-11.2	64	334	12.6
850	31	1,356	-11.8	60	323	13.0
800	31	1,819	-12.8	56	319	15.0
750	31	2,310	-14.3	54	310	16.1
700	31	2,832	-16.2	52	307	16.9
650	31	3,387	-18.7	51	304	17.5
600	31	3,981	-21.9	46	302	19.0
550	31	4,616	-25.6	45	301	22.5
500	31	5,304	-29.5	44	300	24.5
450	31	6,045	-34.1	42	300	27.2
400	31	6,865	-39.3		297	33.0
350	31	7,768	-45.2		295	34.2
300	31	8,785	-50.8		293	38.7
250	30	9,962	-53.7		292	42.7
200	28	11,400	-52.9		289	37.7
175	26	12,269	-52.1		284	32.8
150	26	13,268	-52.1		281	32.8
125	25	14,441	-52.9		280	32.4
100	24	15,880	-53.7		277	30.5
80	24	17,310	-55.1		268	25.5
60	24	19,149	-54.9		266	26.2
50	24	20,314	-54.8		260	23.7
40	23	21,732	-55.0		258	33.2
30	22	23,577	-54.3		250	29.7
25	20	24,726	-54.5		252	40.8
20	17	26,191	-51.0		254	48.4
15	16	28,080	-49.9		251	49.9
10	15	30,794	-45.9		255	69.4
7	6	33,047	-48.8			
5	5	35,170	-48.3			

Standard pressure surface (mb.)	CHARLESTON, S. C. (1019 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	13	5.8	87	317	1.7
1,000	31	168	8.1	74	326	2.9
950	31	594	8.0	64	271	4.7
900	31	1,038	6.8	59	262	10.1
850	31	1,507	5.5	52	262	15.9
800	31	2,002	4.1	45	270	22.0
750	31	2,523	1.8	45	272	26.0
700	31	3,079	- .5	40	272	30.5
650	31	3,663	- 3.2	41	271	33.8
600	31	4,298	- 6.8	41	270	39.4
550	31	4,966	-11.1	42	270	40.2
500	31	5,699	-15.6	38	267	42.7
450	31	6,475	-20.8	37	269	47.6
400	31	7,347	-27.0		268	53.8
350	30	8,298	-34.2		270	60.0
300	29	9,354	-42.5		271	62.4
250	29	10,563	-51.1		274	71.3
200	27	11,986	-56.8		275	78.5
175	27	12,830	-58.0		276	77.9
150	26	13,791	-59.7		278	74.6
125	25	14,921	-62.2		275	65.5
100	23	16,274	-66.3		277	61.8
80	23	17,621	-68.0		274	51.1
60	20	19,360	-64.8		271	35.4
50	18	20,472	-61.3		264	31.1
40	17	21,870	-56.9		261	15.0
30	17	23,707	-53.7		242	6.6
25	17	24,885	-51.3		201	3.5
20	17	26,345	-48.8		235	4.1
15	15	28,253	-45.0		112	7.4
10	13	30,992	-41.4		103	13.4
7	10	33,413	-38.0			
5						

Standard pressure surface (mb.)	COLD BAY, ALASKA (994 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	27	0.0	85	194	11.7
1,000	28	-21				
950	28	388	- 1.2	79	155	4.1
900	28	817	- 3.7	75	184	5.6
850	28	1,267	- 6.0	67	187	6.2
800	28	1,741	- 8.1	60	212	8.9
750	28	2,235	-10.8	56	234	12.4
700	28	2,768	-14.0	54	240	13.2
650	28	3,321	-17.5	52	252	11.9
600	28	3,923	-21.2	48	236	13.8
550	28	4,555	-25.5	47	209	10.7
500	28	5,246	-30.2	45	207	14.4
450	28	5,980	-35.1		213	15.9
400	28	6,801	-41.0		199	15.0
350	28	7,697	-46.7		200	15.0
300	28	8,709	-51.4		202	16.7
250	28	9,886	-53.1		187	21.2
200	27	11,329	-50.4		201	18.3
175	26	12,218	-49.1		211	16.5
150	25	13,225	-48.8		191	15.3
125	25	14,425	-48.1		201	17.5
100	24	15,894	-48.4			
80	24	17,365	-48.5			
60	21	19,273	-48.3			
50	21	20,476	-47.8			
40	19	21,960	-46.6			
30	17	23,918	-44.3			
25	14	25,185	-42.4			
20	13	26,698	-42.0			
15	11	28,636	-42.1			
10						
7						
5						

Standard pressure surface (mb.)	COLUMBIA, MO. (991 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	238	- 2.5	86	282	1.4
1,000	31	165				
950	31	576	- 2.0	75	276	7.4
900	31	1,004	- .6	63	271	12.2
850	31	1,461	- 1.2	58	273	13.0
800	31	1,943	- 2.4	48	271	14.4
750	31	2,451	- 3.9	43	276	18.7
700	31	2,996	- 6.7	43	273	20.4
650	31	3,567	- 9.4	43	273	26.4
600	31	4,187	-12.8	42	270	30.7
550	31	4,842	-17.2	41	269	34.0
500	31	5,554	-21.7	37	269	39.2
450	31	6,317	-26.7		266	45.3
400	31	7,164	-32.0		266	51.9
350	31	8,095	-38.5		267	57.7
300	31	9,138	-45.8		267	68.6
250	31	10,332	-53.1		263	70.9
200	31	11,754	-57.6		265	67.8
175	31	12,597	-57.8		262	68.2
150	30	13,563	-58.2		262	69.9
125	29	14,703	-58.6		264	64.5
100	28	16,095	-60.7		265	58.7
80	27	17,473	-62.3		267	51.3
60	25	19,264	-61.7		260	34.8
50	24	20,391	-61.2		262	30.3
40	23	21,787	-60.0		263	25.3
30	21	23,593	-58.0		256	26.4
25	21	24,744	-57.2		254	26.6
20	17	26,162	-55.6		255	29.0
15	13	28,041	-52.8			
10						
7						
5						

Standard pressure surface (mb.)	DAYTON, OHIO (984 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	297	- 2.0	77	249	3.7
1,000	30	164				
950	30	571	- 1.9	73	247	8.4
900	30	1,002	- 2.3	68	257	15.5
850	30	1,456	- 2.6	58	266	18.7
800	30	1,937	- 3.7	51	269	19.8
750	30	2,443	- 5.6	45	271	24.3
700	30	2,985	- 7.6	40	272	26.2
650	30	3,554	-10.5	39	268	29.7
600	30	4,171	-13.8	36	273	34.6
550	30	4,822	-18.0	36	274	40.4
500	30	5,535	-22.3	36	272	44.7
450	30	6,295	-27.1		271	50.3
400	30	7,143	-32.8		268	55.8
350	30	8,072	-39.0		274	58.9
300	30	9,113	-46.1		270	64.9
250	30	10,306	-53.2		274	71.7
200	30	11,729	-56.7		275	69.0
175	29	12,582	-57.3		274	71.9
150	28	13,551	-57.4		271	69.9
125	27	14,695	-58.0		271	66.1
100	26	16,090	-60.4		269	59.3
80	24	17,489	-61.4		271	42.6
60	22	19,276	-60.9		271	37.3
50	21	20,411	-59.8		270	31.9
40	19	21,815	-59.0		268	26.8
30	19	23,629	-56.9		262	27.4
25	19	24,787	-55.4		255	28.2
20	19	26,218	-53.1		257	35.0
15	18	28,099	-49.7		255	34.6
10	16	30,741	-45.8		252	48.0
7	10	33,185	-41.1			
5						

Standard pressure surface (mb.)	DENVER, COLO. (836 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,611	- 8.0	68	208	6.2
1,000	31	195				
950	31	602				
900	31	1,031				
850	31	1,479				
800	31	1,958	- 1.7	49	274	5.1
750	31	2,469	- 3.8	46	303	9.9
700	31	3,012	- 7.3	45	309	14.8
650	31	3,583	-11.1	45	310	16.9
600	31	4,196	-14.8	43	306	20.6
550	31	4,848	-18.7	40	293	23.1
500	31	5,555	-23.5	40	286	25.3
450	31	6,311	-29.1	42	282	29.1
400	31	7,149	-35.5	41	274	30.9
350	31	8,065	-42.5		271	35.8
300	31	9,091	-49.5		270	40.2
250	31	10,270	-55.0		271	49.5
200	31	11,681	-58.6		268	53.2
175	31	12,520	-59.2		267	54.6
150	31	13,487	-59.1		267	56.2
125	31	14,631	-59.1		268	52.3
100	30	16,022	-60.7		267	43.9
80	28	17,394	-62.1		266	35.0
60	26	19,178	-61.9		264	24.7
50	25	20,312	-60.1		270	19.8
40	22	21,706	-59.6		267	18.3
30	17	23,490	-57.5		271	18.8
25	16	24,643	-55.9		268	25.1
20	12	26,056	-52.5		266	28.6
15						

Standard pressure surface (mb.)	DODGE CITY, KANS. (926 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	792	- 5.1	85	265	2.5
1,000	30	180				
950	30	592				
900	30	1,017	.2	61	279	5.1
850	30	1,476	.9	50	298	8.5
800	30	1,963	.1	42	311	13.0
750	30	2,477	- 2.0	37	294	15.9
700	30	3,024	- 4.9	36	286	17.3
650	30	3,600	- 8.6	37	281	18.7
600	30	4,219	-12.4	34	274	25.8
550	30	4,875	-16.2	33	271	34.6
500	30	5,591	-21.2		275	40.6
450	30	6,355	-26.7		274	43.9
400	30	7,203	-32.3		267	42.9
350	29	8,131	-39.2			
300	29	9,171	-46.1			
250	28	10,365	-53.4			
200	28	11,783	-57.9			
175	27	12,624	-58.7			
150	27	13,592	-58.8			
125	26	14,729	-60.0			
100	26	16,115	-62.9			
80	25	17,482	-64.0			
60	24	19,245	-63.3			
50	23	20,368	-62.4			
40	21	21,758	-60.0			
30	19	23,550	-58.3			
25	14	24,661	-57.2			
20	10	26,078	-55.1			
15	5	27,951	-50.0			

Standard pressure surface (mb.)	EL PASO, TEX. (883 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,197	0.9	64	338	1.4
1,000	31	184				
950	31	605				
900	31	1,051				
850	31	1,509	4.4	44	288	4.9
800	31	2,002	2.6	42	265	11.1
750	31	2,520	.1	41	259	16.9
700	31	3,071	- 2.6	40	253	20.0
650	31	3,654	- 5.0		259	22.9
600	31	4,281	- 8.4		261	23.3
550	31	4,947	-12.0		254	26.4
500	31	5,675	-16.7		255	29.5
450	31	6,453	-22.1		275	26.0
400	31	7,314	-28.1		290	25.8
350	31	8,259	-35.2		293	32.6
300	31	9,315	-43.2		291	39.6
250	31	10,521	-51.7			
200	31	11,947	-57.9			
175	29	12,792	-59.8			
150	29	13,753	-61.0			
125	28	14,879	-63.2			
100	24	16,244	-66.9			
80	22	17,581	-69.6			
60	18	19,303	-65.9			
50	17	20,415	-64.9			
40	15	21,784	-61.6			
30	14	23,590	-57.1			
25	12	24,745	-55.0			
20	10	26,185	-52.3			
15						

Standard pressure surface (mb.)	ELY, NEV. (808 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,908	-11.2	74	187	5.2
1,000	31	241				
950	31	642				
900	31	1,067				
850	31	1,515				
800	31	1,984	- 6.5	71	197	7.0
750	31	2,488	- 5.9	64	203	4.5
700	31	3,029	- 8.2	61	264	7.8
650	31	3,596	-11.1	56	274	12.0
600	31	4,212	-14.7	51	285	16.9
550	31	4,860	-18.6	45	278	17.5
500	31	5,571	-23.3	44	275	22.9
450	31	6,330	-28.6	45	277	23.1
400	31	7,167	-34.6	45	286	27.2
350	31	8,089	-40.9		281	34.2
300	31	9,121	-48.3		278	34.4
250	31	10,303	-55.7		273	38.5
200	31	11,707	-60.1		277	41.4
175	31	12,540	-59.6		271	45.1
150	29	13,506	-58.8		271	44.7
125	26	14,645	-58.5		275	41.0
100	24	16,046	-60.0		277	37.1
80	20	17,428	-61.9			
60	14	19,232	-61.4			
50	14	20,363	-61.4			
40	10	21,769	-59.5			
30	9	23,558	-58.2			
25	8	24,718	-56.9			
20	7	26,165	-54.9			
15	6	28,005	-51.0			

Standard pressure surface (mb.)	FAIRBANKS, ALASKA (993 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	135	-20.2	73	24	2.3
1,000	31	89			40	2.5
950	31	473	-12.5	59	90	3.5
900	31	886	-10.4	60	135	5.8
850	31	1,327	-10.7	59	191	6.2
800	31	1,793	-11.4	59	209	8.7
750	31	2,285	-13.8	59	224	12.2
700	31	2,808	-16.5	59	233	13.6
650	31	3,358	-19.5	57	238	15.5
600	31	3,951	-23.0	55	246	17.3
550	31	4,582	-26.7	51	250	17.5
500	31	5,266	-31.3	53	244	20.2
450	31	5,998	-36.3		244	25.5
400	31	6,812	-41.7		250	28.2
350	31	7,707	-47.2		249	28.2
300	31	8,714	-52.6		251	27.8
250	31	9,882	-55.8		252	28.0
200	31	11,310	-53.1		270	24.7
175	29	12,162	-51.1		277	22.0
150	29	13,168	-50.2		283	24.3
125	27	14,374	-49.2		291	13.6
100	27	15,838	-49.7		294	20.4
80	27	17,300	-48.8		303	23.9
60	27	19,190	-48.7		309	29.7
50	25	20,380	-47.9			
40	23	21,899	-46.3			
30	19	23,825	-43.7			
25	13	25,096	-40.4			
20	11	26,629	-40.2			
15	6	28,605	-40.4			

Standard pressure surface (mb.)	FLINT, MICH. (989 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	234	- 4.1	85	253	3.3
1,000	31	144				
950	31	548	- 5.1	80	260	8.0
900	31	972	- 5.6	79	274	12.2
850	31	1,420	- 6.6	69	280	16.1
800	31	1,893	- 7.3	64	278	19.8
750	31	2,396	- 8.1	61	282	24.3
700	31	2,930	-10.4	58	281	25.6
650	31	3,496	-13.1	53	279	30.7
600	31	4,104	-16.3	48	277	34.2
550	31	4,753	-20.3	45	278	37.7
500	31	5,454	-24.9	40	278	41.2
450	31	6,207	-30.2	40	276	46.4
400	31	7,042	-35.8		276	47.2
350	31	7,958	-42.0		275	52.5
300	31	8,987	-48.4		273	55.4
250	31	10,173	-53.9		272	60.4
200	31	11,596	-56.1		274	60.0
175	30	12,436	-55.3		272	56.5
150	30	13,420	-55.4		271	55.8
125	30	14,582	-56.1		272	52.7
100	29	15,997	-57.1		269	42.9
80	29	17,402	-58.8		265	39.4
60	27	19,221	-58.6		270	33.4
50	26	20,366	-58.1		264	30.1
40	26	21,774	-57.4		257	28.2
30	23	23,614	-54.8		255	32.6
25	22	24,776	-54.1		254	29.1
20	21	26,228	-52.5		254	35.4
15	20	28,109	-49.7		249	40.4
10	14	30,703	-48.8		256	71.9
7	8	33,015	-48.7			

Standard pressure surface (mb.)	FORT WORTH, TEX. (1000 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	180	4.0	82	266	1.6
1,000	31	179			328	5.6
950	31	598	5.3	66	240	5.4
900	31	1,039	5.4	60	259	10.9
850	31	1,506	4.9	50	263	15.2
800	31	2,000	3.4	43	269	17.9
750	31	2,521	1.4	37	268	19.6
700	31	3,074	- 1.3		267	24.1
650	31	3,659	- 4.2	33	262	31.3
600	31	4,290	- 7.5		259	35.6
550	31	4,956	-11.7		258	40.0
500	31	5,686	-16.3		258	44.7
450	31	6,464	-21.7		260	51.1
400	31	7,328	-27.6		262	56.0
350	31	8,276	-34.2		261	65.7
300	31	9,339	-42.1		262	74.2
250	31	10,550	-51.0		263	83.9
200	31	11,976	-57.8		267	86.9
175	31	12,816	-58.7		266	82.6
150	31	13,781	-60.4		265	79.3
125	31	14,913	-62.6		266	76.7
100	31	16,275	-66.6		264	60.4
80	30	17,614	-68.9		267	48.8
60	26	19,339	-66.2		267	32.3
50	26	20,449	-64.6		262	29.0
40	26	21,823	-61.3		262	20.2
30	25	23,628	-57.6		264	16.3
25	24	24,779	-56.1		258	15.7
20	23	26,207	-54.1		260	19.8
15	20	28,053	-51.7		259	18.7
10	12	30,728	-46.8			
7						

Standard pressure surface (mb.)	GLASGOW, MONT. (935 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	695	-14.1	85	334	1.6
1,000	31	180				
950	31	571				
900	31	988	- 8.1	74	298	8.5
850	31	1,434	- 6.3	61	302	15.2
800	31	1,907	- 7.8	54	298	18.3
750	31	2,403	- 9.8	50	290	20.6
700	31	2,937	-12.3	49	293	19.8
650	31	3,495	-15.5	49	289	21.2
600	31	4,101	-19.1	47	289	23.3
550	31	4,738	-23.2	45	284	21.6
500	31	5,435	-27.8	43	281	18.1
450	31	6,174	-33.3	43	288	12.4
400	31	7,006	-39.5		272	11.7
350	31	7,904	-46.0		264	13.2
300	31	8,914	-52.7		229	10.9
250	31	10,078	-57.0		339	2.5
200	31	11,487	-57.5		287	13.2
175	31	12,333	-56.3		281	14.0
150	31	13,314	-56.0		287	10.7
125	29	14,469	-56.4			
100	29	15,883	-57.5			
80	29	17,291	-58.5			
60	27	19,088	-59.5			
50	27	20,226	-60.4			
40	26	21,611	-61.1			
30	24	23,390	-61.0			
25	24	24,526	-59.5			
20	22	25,936	-58.4			
15	7	27,937	-57.0			
10						
7						

Standard pressure surface (mb.)	GRAND JUNCTION, COLO. (854 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,474	- 5.7	79	109	3.9
1,000	31	215				
950	31	626				
900	31	1,055				
850	31	1,513			113	4.9
800	31	1,990	- 5.1	65	145	1.9
750	31	2,492	- 6.4	63	212	5.1
700	31	3,033	- 9.2	64	244	11.1
650	31	3,598	-12.2	60	266	14.8
600	31	4,211	-15.4	55	276	17.3
550	31	4,857	-19.4	48	276	20.0
500	31	5,566	-24.0	46	271	24.7
450	31	6,324	-29.3	44	271	29.1
400	31	7,158	-35.3		273	33.2
350	31	8,075	-41.8		276	36.7
300	31	9,105	-48.5		276	42.6
250	31	10,286	-55.1		281	48.8
200	31	11,694	-59.4		276	50.3
175	30	12,537	-59.3		272	47.4
150	29	13,501	-58.9		273	46.8
125	28	14,638	-59.1		269	42.6
100	27	16,028	-61.7		267	41.8
80	24	17,409	-63.7		269	36.3
60	22	19,167	-63.1		265	31.1
50	22	20,291	-62.5		267	26.2
40	21	21,684	-61.9		258	18.7
30	19	23,488	-60.0		265	20.8
25	17	24,634	-59.2		270	22.9
20	15	26,053	-57.2		277	19.2
15	13	27,909	-56.2			
10	5	30,597	-55.4			
7						

Standard pressure surface (mb.)	GREAT FALLS, MONT. (887 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,123	- 6.6	68	235	7.2
1,000	31	171				
950	31	573				
900	31	1,002				
850	31	1,453	- 4.8	54	248	18.7
800	31	1,929	- 6.6	55	266	18.3
750	31	2,426	- 8.9	55	278	18.1
700	31	2,963	-11.8	52	287	18.7
650	31	3,522	-15.0	50	287	23.5
600	31	4,129	-18.7	48	288	23.5
550	31	4,767	-22.8	47	287	25.6
500	31	5,466	-27.6	47	286	28.2
450	31	6,209	-33.2	45	287	29.1
400	31	7,035	-39.3		284	30.1
350	31	7,937	-45.6		284	32.6
300	31	8,951	-51.5		286	33.6
250	31	10,120	-56.5		287	36.3
200	31	11,528	-58.2		287	31.3
175	31	12,369	-57.6		286	32.1
150	30	13,341	-57.8		283	34.4
125	28	14,496	-56.7		282	32.1
100	26	15,912	-58.1		288	25.6
80	24	17,323	-59.2		286	22.5
60	18	19,127	-58.3		284	30.1
50	14	20,253	-59.2		294	25.6
40	12	21,668	-59.6		296	28.6
30	9	23,459	-59.3			
25						
20						
15						
10						
7						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JANUARY 1960

GREEN BAY, WIS (991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	210	- 6.7	88	310	7.6
1,000--	31	142				
950----	31	542	- 7.6	78	305	5.8
900----	31	962	- 8.0	72	293	9.1
850----	31	1,407	- 7.7	66	288	10.5
800----	31	1,878	- 8.7	59	285	11.1
750----	31	2,377	- 9.6	50	285	15.0
700----	31	2,909	-12.2	50	280	19.6
650----	31	3,470	-14.7	45	286	23.3
600----	31	4,075	-18.1	44	286	25.6
550----	31	4,717	-21.8	42	293	24.9
500----	31	5,417	-26.2	43	287	26.0
450----	31	6,164	-31.5	41	283	31.3
400----	31	6,996	-37.4		294	26.2
350----	31	7,906	-43.4		293	26.6
300----	31	8,929	-49.5		267	25.5
250----	31	10,109	-54.3		268	25.3
200----	31	11,531	-56.5		271	34.4
175----	31	12,379	-55.8		271	31.9
150----	29	13,361	-55.2		273	27.2
125----	27	14,523	-55.6		270	37.3
100----	26	15,935	-57.3		270	38.1
80-----	24	17,344	-58.6			
60-----	23	19,147	-58.5			
50-----	22	20,304	-58.5			
40-----	19	21,684	-59.8			
30-----	18	23,491	-58.6			
25-----	17	24,651	-57.1			
20-----	14	26,016	-56.7			
15-----						
10-----						

GREENSBORO, N. C. (988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	273	1.3	83	343	1.6
1,000--	30	171				
950----	30	588	3.6	63	301	6.4
900----	30	1,025	3.2	61	281	9.7
850----	30	1,488	2.1	59	277	13.6
800----	30	1,976	.7	54	270	16.5
750----	30	2,495	- .6	51	274	21.8
700----	30	3,044	- 3.1	46	272	23.3
650----	30	3,621	- 6.0	42	269	28.4
600----	29	4,252	- 9.0	41	273	28.4
550----	29	4,909	-12.9		279	31.1
500----	29	5,642	-17.6		271	31.1
450----	29	6,414	-22.8		271	33.2
400----	29	7,277	-28.9	42		
350----	29	8,219	-36.0			
300----	29	9,272	-44.0			
250----	28	10,472	-52.0			
200----	27	11,892	-56.4			
175----	26	12,729	-57.5			
150----	25	13,697	-57.9			
125----	23	14,823	-60.0			
100----	20	16,199	-63.2			
80-----	14	17,531	-63.0			
60-----	14	19,311	-60.8			
50-----	13	20,449	-58.8			
40-----	13	21,864	-55.1			
30-----	12	23,720	-51.2			
25-----	10	24,909	-48.4			
20-----	9	26,381	-46.1			
15-----	6	28,331	-41.7			
10-----						

HILO, HAWAII (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	11	18.4	85	232	4.9
1,000--	31	152	20.2	76	237	2.9
950----	31	591	17.3	80	95	5.4
900----	31	1,054	14.0	83	93	7.4
850----	31	1,535	11.2	79	104	7.6
800----	31	2,041	10.5	56	118	4.1
750----	31	2,581	9.2		105	2.7
700----	31	3,147	6.3		71	1.4
650----	31	3,747	3.0		360	1.7
600----	31	4,395	- .8		321	5.2
550----	31	5,081	- 4.7		304	9.1
500----	31	5,828	- 9.5		305	12.2
450----	31	6,627	-15.5		302	16.7
400----	31	7,512	-21.7		294	21.4
350----	31	8,483	-28.0		299	27.8
300----	31	9,573	-35.4		300	35.8
250----	31	10,822	-43.5		285	46.6
200----	31	12,290	-53.8		284	52.7
175----	31	13,136	-59.4		285	49.7
150----	31	14,088	-65.2		288	50.3
125----	31	15,182	-71.5		294	35.2
100----	31	16,479	-77.3		300	24.3
80-----	29	17,744	-78.7		290	13.8
60-----	28	19,412	-71.6		284	12.0
50-----	28	20,500	-67.3		271	8.7
40-----	26	21,865	-61.6		273	8.9
30-----	26	23,667	-56.8		270	11.9
25-----	26	24,828	-54.4		273	6.8
20-----	22	26,260	-52.3			
15-----	6	28,154	-49.9			
10-----						

INTERNAT. FALLS, MINN. (974 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	360	-16.8	73	275	6.0
1,000--	31	162				
950----	31	550	-14.8	74	265	5.4
900----	31	959	-13.0	75	295	10.9
850----	31	1,396	-11.5	68	300	14.8
800----	31	1,861	-11.6	59	302	16.5
750----	31	2,352	-13.1	54	298	18.8
700----	31	2,877	-15.4	49	294	21.2
650----	31	3,430	-18.1	46	293	23.9
600----	31	4,029	-21.3	47	293	27.2
550----	31	4,658	-24.8	47	289	30.3
500----	31	5,354	-28.9	49	287	34.2
450----	31	6,090	-33.8	46	288	38.9
400----	30	6,913	-39.3		288	42.6
350----	30	7,815	-45.2		286	46.6
300----	30	8,831	-51.1		283	48.6
250----	30	10,005	-54.8		280	52.3
200----	29	11,434	-55.8		278	52.3
175----	29	12,287	-54.7		278	49.7
150----	28	13,268	-54.1		278	44.5
125----	28	14,436	-54.7		277	38.1
100----	28	15,861	-55.9		276	32.8
80-----	23	17,269	-57.2		276	29.5
60-----	18	19,086	-57.9		274	30.3
50-----	17	20,236	-57.5		276	28.2
40-----	17	21,639	-58.3		274	27.6
30-----	12	23,461	-58.4			
25-----	5	24,600	-57.4			
20-----						
15-----						
10-----						

JACKSON, MISS. (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	101	4.6	86	306	1.0
1,000--	31	175	5.1	80	338	2.7
950----	31	596	5.1	71	283	5.4
900----	31	1,037	5.5	60	280	10.9
850----	31	1,504	5.0	51	278	15.9
800----	31	1,998	3.7	48	277	20.6
750----	31	2,519	1.9	46	274	24.1
700----	31	3,075	- .6	46	271	26.2
650----	31	3,664	- 3.1	36	273	32.6
600----	31	4,296	- 6.2		271	36.1
550----	31	4,968	-10.5		271	39.6
500----	31	5,699	-15.3		272	45.1
450----	31	6,481	-20.4		272	48.4
400----	31	7,349	-26.4		273	52.5
350----	31	8,301	-33.4		272	56.7
300----	31	9,366	-41.3		268	72.3
250----	31	10,582	-50.1		271	81.6
200----	31	12,015	-57.2		279	80.1
175----	30	12,852	-58.7		275	82.0
150----	30	13,819	-60.2			
125----	29	14,944	-63.1			
100----	26	16,301	-67.3			
80-----	21	17,625	-69.2			
60-----	16	19,345	-66.5			
50-----	15	20,459	-63.8			
40-----	15	21,836	-60.8			
30-----	14	23,638	-57.1			
25-----	12	24,807	-54.2			
20-----	11	26,247	-52.0			
15-----	11	28,126	-48.1			
10-----	[illegible]	30,831	-41.3			

JACKSONVILLE, FLA. (1020 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	7.8	86	294	2.9
1,000--	31	171	10.7	74	298	3.1
950----	31	596	10.6	63	255	8.2
900----	31	1,050	9.6	52	260	12.6
850----	31	1,523	8.5	45	264	15.7
800----	31	2,023	6.1	47	268	19.0
750----	31	2,546	4.2	42	269	24.7
700----	31	3,110	2.1	36	267	29.9
650----	31	3,698	- 1.2	37	269	33.6
600----	31	4,339	- 4.8	35	267	39.4
550----	31	5,010	- 9.2	32	268	44.1
500----	31	5,749	-13.8	36	266	48.8
450----	31	6,532	-19.2	35	266	53.0
400----	31	7,409	-25.5	33	270	58.7
350----	31	8,364	-32.6	36	269	63.7
300----	31	9,433	-40.8		271	69.8
250----	31	10,650	-49.9		274	74.4
200----	31	12,082	-56.7		272	82.8
175----	31	12,926	-58.1		275	84.9
150----	31	13,892	-60.8		276	79.9
125----	31	15,016	-65.1		272	68.4
100----	30	16,358	-69.2		274	62.8
80-----	28	17,681	-71.2		275	52.7
60-----	25	19,391	-68.3		277	35.0
50-----	25	20,492	-65.1		278	22.0
40-----	24	21,872	-60.8		275	17.3
30-----	24	23,681	-56.5		288	6.6
25-----	23	24,843	-54.4		1	.8
20-----	22	26,281	-50.8		291	3.9
15-----	19	28,177	-45.3		177	3.9
10-----	10	30,910	-38.6			

KING SALMON, ALASKA (1001 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	15	- 4.5	82	101	4.9
1,000--	31	21			134	10.1
950----	31	426	- 2.9	72	139	11.7
900----	31	856	- 4.1	69	150	12.6
850----	31	1,305	- 6.0	68	170	13.0
800----	31	1,778	- 8.4	64	192	12.4
750----	31	2,273	-11.1	60	197	14.4
700----	31	2,804	-14.0	56	197	16.1
650----	31	3,359	-17.3	53	195	18.8
600----	31	3,959	-21.0	52	195	21.2
550----	31	4,591	-25.4	51	198	22.3
500----	31	5,282	-31.0	48	203	23.1
450----	31	6,020	-35.2		208	23.3
400----	31	6,837	-40.8		212	25.6
350----	31	7,735	-46.3		219	26.6
300----	31	8,747	-51.3		218	28.4
250----	31	9,923	-54.0		222	27.4
200----	29	11,346	-51.5		223	23.3
175----	29	12,216	-50.5		221	19.0
150----	28	13,230	-49.1		225	19.6
125----	26	14,440	-48.7		226	16.5
100----	26	15,908	-48.1		238	12.8
80-----	23	17,368	-48.5		248	10.9
60-----	15	19,274	-48.6		250	7.6
50-----	12	20,507	-47.8		231	2.5
40-----	9	21,985	-46.8			
30-----	[illegible]	23,918	-44.9			
25-----	5	25,153	-42.3			
20-----						
15-----						
10-----						

KOTZEBUE, ALASKA (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	-20.5	77	85	10.7
1,000--	31	82			79	10.7
950----	31	471	-16.0	66	90	17.3
900----	31	876	-15.1	66	100	13.6
850----	31	1,308	-14.9	66	97	7.4
800----	31	1,766	-15.8	62	104	4.3
750----	31	2,248	-17.6	58	158	3.1
700----	31	2,767	-20.0	54	196	4.1
650----	31	3,309	-22.9	50	210	7.4
600----	31	3,897	-25.9	47	209	9.5
550----	31	4,520	-29.5	45	208	12.6
500----	31	5,198	-33.5	40	215	14.2
450----	31	5,925	-38.6		211	16.1
400----	31	6,733	-43.3		210	18.5
350----	31	7,622	-48.2		211	25.8
300----	31	8,628	-51.7		215	21.4
250----	30	9,803	-52.5		218	19.6
200----	30	11,252	-50.2		219	19.0
175----	29	12,122	-48.8		222	17.9
150----	28	13,135	-48.3		225	15.7
125----	26	14,328	-47.5		232	14.8
100----	26	15,804	-46.3		245	13.8
80-----	23	17,275	-46.9		270	13.6
60-----	23	19,182	-46.3		290	13.2
50-----	20	20,402	-45.5		294	14.2
40-----	18	21,909	-44.9		309	14.8
30-----	18	23,838	-43.4		322	22.9
25-----	14	25,027	-43.9		339	23.7
20-----	11	26,606	-42.0		333	32.1
15-----	10	28,645	-41.2			
10-----						

LAKE CHARLES, LA. (1021 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	7.0	87	21	3.5
1,000--	31	176	7.7	76	26	4.5
950----	31	602	8.6	65	309	2.1
900----	31	1,048	8.7	52	278	6.4
850----	31	1,520	7.8	45	274	10.9
800----	31	2,019	6.0	42	260	19.2
750----	31	2,545	4.2	37	259	23.7
700----	31	3,106	1.8		260	28.0
650----	31	3,698	- .9		262	29.7
600----	31	4,335	- 4.9		262	33.4
550----	31	5,010	- 9.1		263	35.9
500----	31	5,747	-13.6		261	43.5
450----	31	6,534	-19.3		257	42.9
400----	31	7,407	-25.4		255	46.6
350----	31	8,363	-32.3		264	48.8
300----	31	9,433	-40.4			
250----	31	10,651	-49.6			
200----	31	12,086	-57.3			
175----	30	12,921	-59.2			
150----	30	13,882	-61.6			
125----	26	14,997	-64.0			
100----	25	16,345	-70.1			
80-----	23	17,665	-71.7			
60-----	20	19,366	-67.6			
50-----	19	20,473	-64.8			
40-----	18	21,846	-59.5			
30-----	17	23,664	-55.3			
25-----	14	24,828	-53.5			
20-----	11	26,261	-50.3			
15-----	6	28,154	-45.6			
10-----						

LANDER, WYO. (827 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,696	-10.4	72	244	1.7
1,000--	31	207				
950----	31	608				
900----	31	1,033				
850----	31	1,481				
800----	31	1,952	- 5.2	56	226	.6
750----	31	2,456	- 6.5	52	285	5.4
700----	31	2,995	- 9.1	51	286	12.8
650----	31	3,559	-12.6	52	289	18.5
600----	31	4,171	-16.3	53	290	20.6
550----	31	4,816	-20.3	51	290	23.3
500----	31	5,520	-25.0	48	283	23.7
450----	31	6,266	-30.5	47	284	29.9
400----	31	7,105	-36.9	46	279	34.8
350----	31	8,015	-43.7		277	38.7
300----	31	9,035	-50.4		276	42.6
250----	31	10,208	-56.2		273	47.0
200----	30	11,611	-59.1		275	44.7
175----	30	12,450	-58.1		280	41.4
150----	30	13,421	-58.2		278	41.2
125----	30	14,570	-58.2		276	40.0
100----	30	15,972	-59.5		277	34.6
80-----	29	17,366	-61.0		278	31.3
60-----	29	19,152	-60.5		275	24.1
50-----	28	20,291	-60.6		274	22.2
40-----	28	21,678	-60.7		276	22.7
30-----	26	23,476	-59.6		276	22.0
25-----	21	24,618	-58.5		276	23.5
20-----	19	26,057	-56.8		281	25.5
15-----	15	27,897	-54.7		286	29.0
10-----	7	30,441	-55.6			

LAS VEGAS, NEV. (943 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	660	1.7	70	255	4.3
1,000--	31	181				
950----	31	597				
900----	31	1,039	4.3	48	352	2.7
850----	31	1,502	2.2	48	347	2.1
800----	31	1,990	- .3	50	253	3.5
750----	31	2,502	- 2.6	47	249	6.8
700----	31	3,049	- 5.1	43	265	9.9
650----	31	3,623	- 8.6	41	270	12.6
600----	31	4,244	-12.4	40	273	16.9
550----	31	4,899	-16.8	41	272	20.6
500----	31	5,613	-21.4	34	268	23.7
450----	31	6,373	-26.8	35	264	26.6
400----	31	7,222	-32.5		266	32.8
350----	31	8,150	-39.0		264	39.4
300----	31	9,192	-46.1		264	43.1
250----	31	10,383	-54.0		265	48.8
200----	31	11,795	-58.9		262	53.2
175----	29	12,632	-59.6		265	54.8
150----	27	13,599	-59.6		262	56.3
125----	26	14,738	-60.1		264	49.0
100----	25	16,125	-62.1		266	42.4
80-----	24	17,501	-64.4		265	35.0
60-----	21	19,269	-63.1		267	24.5
50-----	20	20,394	-61.5		264	19.0
40-----	20	21,778	-60.3		264	18.5
30-----	19	23,589	-58.8		270	17.3
25-----	16	24,756	-57.0		267	14.2
20-----	14	26,182	-55.6		261	20.4
15-----	13	28,018	-52.9		254	24.3
10-----	8	30,730	-45.4			

LITTLE ROCK, ARK. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	79	2.9	83	313	0.8
1,000--	30	171	2.6	78	323	1.4
950----	30	592	2.6	75	260	7.2
900----	30	1,025	2.4	64	266	12.2
850----	30	1,488	2.8	49	271	15.3
800----	30	1,977	1.5	43	270	20.0
750----	30	2,497	- .4	43	274	22.5
700----	30	3,045	- 2.7	38	272	24.1
650----	30	3,628	- 5.2		269	32.1
600----	30	4,256	- 8.4		273	35.4
550----	30	4,921	-12.5		274	40.8
500----	30	5,648	-17.3		279	39.4
450----	30	6,423	-22.8		276	44.9
400----	30	7,284	-28.7		278	43.9
350----	30	8,227	-35.5			
300----	30	9,283	-43.2			
250----	30	10,491	-51.3			
200----	30	11,915	-58.0			
175----	30	12,756	-58.3			
150----	30	13,725	-59.2			
125----	30	14,861	-61.7			
100----	29	16,231	-64.8			
80-----	29	17,583	-66.9			
60-----	28	19,328	-64.6			
50-----	27	20,445	-62.8			
40-----	27	21,829	-59.8			
30-----	20	23,662	-56.4			
25-----	17	24,832	-54.5			
20-----	15	26,284	-51.6			
15-----	8	28,168	-48.2			
10-----						

McGRATH, ALASKA (995 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	103	-18.9	72	67	0.6
1,000--	31	69			104	1.9
950----	31	457	-13.9	71	128	4.5
900----	31	869	-10.7	74	163	6.6
850----	31	1,310	-10.0	71	173	11.3
800----	31	1,777	-10.9	66	187	14.0
750----	31	2,265	-13.3	63	193	13.4
700----	31	2,794	-16.0	60	201	13.8
650----	31	3,343	-19.3	59	209	14.6
600----	31	3,939	-22.9	55	215	15.7
550----	31	4,565	-27.0	55	223	15.5
500----	31	5,253	-31.5	52	221	18.3
450----	31	5,982	-36.6	55	222	21.8
400----	31	6,797	-42.0		230	19.4
350----	31	7,690	-47.4		228	17.5
300----	31	8,698	-52.1		227	23.5
250----	31	9,871	-54.1		235	23.5
200----	30	11,307	-51.3		241	17.7
175----	29	12,174	-49.4		241	15.0
150----	29	13,185	-48.9		240	13.0
125----	29	14,387	-47.9		257	12.4
100----	29	15,857	-48.4		272	14.6
80-----	26	17,337	-47.4		274	11.5
60-----	26	19,241	-46.9		305	14.8
50-----	26	20,452	-46.5		296	17.3
40-----	24	21,950	-45.1		329	12.8
30-----	23	23,888	-43.3		349	19.6
25-----	23	25,118	-42.8			
20-----	16	26,673	-40.5			
15-----	10	28,717	-39.2			
10-----						

MEDFORD, OREG. (971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	401	2.3	86	111	1.7
1,000--	31	162				
950----	31	581	3.1	80	146	3.1
900----	31	1,017	2.4	73	161	7.0
850----	31	1,478	.4	70	195	7.2
800----	31	1,963	- 2.2	68	225	9.7
750----	31	2,472	- 4.9	66	240	11.9
700----	31	3,012	- 7.8	65	247	14.6
650----	31	3,584	-11.2	58	252	15.0
600----	31	4,196	-14.8	48	258	16.5
550----	31	4,848	-19.2	47	261	18.1
500----	31	5,552	-24.0	47	268	20.4
450----	31	6,308	-29.4	47	269	26.2
400----	31	7,145	-35.1	48	278	27.0
350----	31	8,063	-41.7		278	32.8
300----	31	9,093	-48.8		281	33.4
250----	31	10,271	-55.9		289	36.9
200----	30	11,669	-60.6		286	36.7
175----	28	12,496	-59.8		279	32.1
150----	28	13,461	-58.7		274	32.4
125----	27	14,602	-58.4		274	30.3
100----	27	16,003	-59.7		279	29.3
80-----	25	17,401	-60.5		279	23.7
60-----	22	19,201	-60.4		285	17.9
50-----	21	20,342	-59.9		288	13.8
40-----	21	21,737	-59.4		311	12.6
30-----	19	23,540	-59.0		324	11.7
25-----	15	24,659	-58.4		321	12.8
20-----	12	26,085	-57.5		339	13.8
15-----	10	27,938	-55.0			
10-----	5	30,620	-52.2			

MERIDA, MEXICO (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	11	18.4	91	74	4.1
1,000--	31	159	20.7	80	91	8.7
950----	31	601	19.4	73	108	11.3
900----	31	1,068	16.7	68	102	7.4
850----	31	1,553	14.0	67	92	4.3
800----	31	2,064	12.6	47	108	3.1
750----	31	2,600	10.6	39		.0
700----	31	3,176	8.0	36	256	2.3
650----	31	3,781	4.9	33	243	3.1
600----	31	4,434	1.3		250	5.6
550----	31	5,120	- 2.9		256	7.8
500----	31	5,878	- 7.5		255	12.4
450----	31	6,683	-13.1		255	18.1
400----	31	7,577	-20.1		259	22.7
350----	31	8,553	-27.4		263	26.6
300----	31	9,643	-35.8		267	32.8
250----	31	10,885	-45.4		263	34.4
200----	31	12,339	-54.9		247	44.9
175----	31	13,182	-60.0		244	47.6
150----	31	14,133	-65.0		246	43.9
125----	30	15,232	-70.1		246	29.5
100----	26	16,545	-76.4		246	17.5
80-----	22	17,816	-78.8		257	7.8
60-----	20	19,474	-73.8		109	3.7
50-----	20	20,551	-68.6		112	3.5
40-----	20	21,908	-62.6		176	1.4
30-----	20	23,709	-56.6		13	4.5
25-----	20	24,871	-54.2		42	5.2
20-----	20	26,312	-50.9		33	2.5
15-----	19	28,207	-46.6		88	11.7
10-----	10	30,931	-41.9			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MIAMI, FLA. (1019 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	15.5	87	352	1.4
1,000	31	168	17.6	72	26	2.9
950	31	602	15.0	68	95	.8
900	31	1,062	12.9	61	258	2.1
850	31	1,542	11.6	52	282	5.8
800	31	2,048	10.1	40	276	8.5
750	31	2,583	7.9	36	273	12.2
700	31	3,151	5.3	32	273	15.9
650	31	3,750	2.3	27	269	19.0
600	31	4,396	- 1.0		268	22.9
550	31	5,077	- 5.1		274	25.6
500	31	5,829	-10.1		272	30.3
450	31	6,627	-15.6		268	35.8
400	31	7,514	-22.0		269	39.2
350	31	8,482	-29.3		272	45.1
300	31	9,564	-37.8		275	50.7
250	31	10,798	-46.9		274	56.0
200	31	12,251	-54.4		274	72.7
175	31	13,099	-58.3		275	74.2
150	31	14,061	-62.2		276	66.5
125	31	15,173	-67.5		277	56.3
100	31	16,497	-73.7		276	46.2
80	30	17,790	-75.6		280	32.4
60	30	19,467	-71.5		281	16.9
50	29	20,554	-67.5		273	9.3
40	27	21,911	-62.7		286	8.0
30	26	23,716	-56.2		318	5.4
25	26	24,879	-53.5		313	1.2
20	24	26,327	-50.1		54	1.6
15	24	28,225	-46.0		79	6.4
10	20	30,948	-40.4		88	18.7
7	13	33,387	-39.0		108	15.3
5	10	35,757	-35.7			

MIDLAND, TEX. (918 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	871	1.9	82	213	1.7
1,000	30	179				
950	30	595				
900	30	1,037	4.6	66	220	2.9
850	30	1,505	6.1	45	253	10.7
800	30	2,001	4.8	36	267	15.7
750	30	2,524	2.0	36	267	19.2
700	30	3,078	- .6	32	269	24.1
650	30	3,666	- 3.7	28	264	27.2
600	30	4,296	- 7.7		264	28.0
550	30	4,961	-11.6		257	33.0
500	30	5,693	-16.0		265	37.5
450	30	6,469	-21.1		279	37.5
400	30	7,339	-27.2		262	43.5
350	30	8,287	-34.3			
300	30	9,349	-42.1			
250	30	10,560	-50.9			
200	29	11,996	-57.8			
175	27	12,844	-59.7			
150	25	13,807	-60.9			
125	23	14,944	-63.7			
100	23	16,299	-67.0			
80	19	17,658	-68.2			
60	18	19,393	-66.7			
50	16	20,501	-64.1			
40	15	21,873	-61.4			
30	13	23,680	-58.1			
25	11	24,835	-55.3			
20	10	26,271	-52.8			
15	9	28,130	-50.4			
10						
7						
5						

MONTGOMERY, ALA. (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	5.7	83	298	2.5
1,000	31	173	6.5	75	247	1.6
950	31	596	6.9	65	283	5.4
900	31	1,040	6.4	51	276	10.3
850	31	1,508	5.5	50	275	15.9
800	31	2,004	4.4	47	271	22.0
750	31	2,528	2.4	45	269	26.4
700	31	3,084	.1	43	269	31.7
650	30	3,672	- 2.5		267	36.7
600	30	4,307	- 6.1	38	265	42.6
550	30	4,978	-10.2		266	43.9
500	30	5,711	-14.7		267	49.0
450	30	6,493	-19.9		267	54.4
400	30	7,366	-26.3	34	268	61.2
350	30	8,317	-33.4		268	69.8
300	30	9,381	-41.6		268	76.7
250	30	10,593	-50.4		270	86.1
200	30	12,022	-57.3		271	90.2
175	30	12,863	-59.0		270	91.5
150	30	13,827	-60.4		271	88.8
125	29	14,953	-63.5		271	74.4
100	25	16,293	-67.9		270	65.1
80	24	17,628	-69.7		268	47.6
60	23	19,347	-67.4		267	32.4
50	20	20,459	-64.6		270	24.9
40	18	21,817	-61.1		265	22.9
30	18	23,626	-56.4		266	18.1
25	18	24,789	-54.5		265	16.5
20	17	26,233	-51.7		260	15.0
15	14	28,091	-47.3		267	18.8
10	7	30,804	-40.3			
7						
5						

NANTUCKET, MASS. (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	14	- 0.4	76	307	10.9
1,000	31	124	- .4	70	317	8.7
950	31	531	- 1.9	64	296	13.2
900	31	963	- 3.2	60	294	15.7
850	31	1,414	- 4.8	56	286	[illegible]
800	31	1,889	- 6.2	51	281	21.6
750	31	2,391	- 7.9	52	278	23.7
700	31	2,927	-10.0	46	276	26.6
650	31	3,494	-13.0	45	279	31.1
600	31	4,102	-16.2	43	280	37.5
550	31	4,750	-19.8	42	282	37.5
500	31	5,454	-24.3	37	279	40.8
450	31	6,210	-29.1		282	44.7
400	31	7,049	-34.6		278	45.9
350	31	7,970	-40.4		279	54.4
300	31	9,006	-46.6		279	56.5
250	31	10,199	-52.5		279	61.4
200	30	11,625	-55.3		277	64.3
175	29	12,483	-55.1		276	58.9
150	28	13,467	-55.2		274	52.5
125	28	14,629	-56.3		271	45.9
100	28	16,044	-57.5		273	41.8
80	27	17,449	-58.8		268	35.4
60	27	19,251	-58.6		268	26.8
50	26	20,398	-57.3		265	24.3
40	25	21,816	-56.3		267	23.3
30	24	23,645	-55.1		272	22.2
25	24	24,815	-52.9		263	22.2
20	23	26,264	-51.2		261	24.9
15	22	28,156	-48.1		260	27.2
10	20	30,878	-42.4		262	32.6
7	16	33,367	-37.5			
5	8	35,775	-37.6			

NASHVILLE, TENN. (999 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	177	2.2	88	281	1.4
1,000	31	171			299	1.9
950	31	585	1.7	73	264	5.2
900	31	1,022	1.1	70	279	[illegible]
850	31	1,481	.2	64	266	13.0
800	31	1,967	- .7	54	[illegible]	17.9
750	31	2,479	- 2.3	45	272	20.8
700	31	3,028	- 4.2	41	273	23.9
650	31	3,600	- 7.2	39	274	29.3
600	31	4,227	-10.4	39	275	30.7
550	31	4,886	-14.4	38	274	33.2
500	31	5,609	-18.7		265	36.9
450	31	6,381	-23.5			
400	31	7,240	-29.6			
350	31	8,179	-36.6			
300	31	9,231	-44.3			
250	30	10,430	-52.4			
200	28	11,867	-57.5			
175	26	12,698	-58.4			
150	23	13,658	-59.1			
125	19	14,776	-60.1			
100	16	16,132	-62.7			
80	13	17,488	-63.6			
60	11	19,259	-61.5			
50	10	20,388	-58.2			
40	9	21,784	-54.9			
30	9	23,646	-50.9			
25	9	24,840	-48.4			
20	7	26,301	-46.5			
15						
10						
7						
5						

N. Y. INT. AP, IDLEWILD (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	- 0.6	64	322	7.2
1,000	31	143	- 1.1	61	323	8.5
950	31	552	- 2.0	59	297	7.0
900	31	980	- 3.7	59	290	12.6
850	31	1,430	- 5.0	58	288	18.3
800	31	1,905	- 6.2	53	287	22.3
750	31	2,414	- 7.0	44	289	26.6
700	31	2,946	- 8.9	41	289	31.5
650	31	3,517	-11.4	45	286	36.5
600	31	4,127	-14.9	43	283	40.0
550	31	4,780	-19.0	41	284	46.0
500	31	5,484	-23.6		285	50.5
450	31	6,245	-28.6	40	282	57.1
400	31	7,080	-34.2		281	61.8
350	31	8,003	-40.1		279	71.3
300	31	9,040	-46.8		279	72.5
250	31	10,231	-53.1		281	69.8
200	29	11,642	-56.3		280	68.6
175	29	12,492	-55.6		282	63.1
150	29	13,474	-55.8		278	59.7
125	29	14,632	-57.0		275	51.7
100	29	16,039	-58.7		273	46.4
80	28	17,433	-59.7		271	34.6
60	26	19,238	-59.4		271	26.2
50	25	20,379	-58.3		269	23.7
40	25	21,788	-56.6		270	23.7
30	25	23,624	-54.3		265	22.9
25	24	24,796	-52.8		265	28.4
20	22	26,225	-51.0		265	35.8
15	21	28,118	-48.0		265	39.4
10	18	30,811	-41.6		266	60.2
7	12	33,159	-39.9			
5	6	35,410	-42.1			

NOME, ALASKA (1006 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	-14.7	76	60	7.6
1,000	30	51			67	4.7
950	30	445	-12.6	67	123	2.9
900	30	856	-12.1	65	203	3.1
850	30	1,293	-12.6	61	267	1.9
800	30	1,754	-14.1	59	236	3.7
750	30	2,240	-16.1	58	229	7.2
700	30	2,760	-18.7	54	225	10.5
650	30	3,306	-22.0	52	214	10.7
600	30	3,894	-25.4	50	227	12.6
550	30	4,517	-29.4	48	228	15.3
500	30	5,196	-34.1	47	232	13.2
450	30	5,924	-38.8		236	13.2
400	30	6,729	-43.8		248	13.6
350	30	7,617	-48.3		243	20.0
300	30	8,624	-51.7		219	15.3
250	30	9,807	-51.7		213	15.0
200	30	11,261	-49.2		238	17.9
175	30	12,138	-48.5		230	16.5
150	30	13,156	-47.7		232	14.8
125	30	14,361	-47.2		234	15.9
100	30	15,841	-46.6		243	13.8
80	30	17,322	-46.6		262	8.4
60	30	19,233	-46.1		283	11.1
50	30	20,448	-45.4		263	7.4
40	27	21,975	-43.1		326	4.7
30	24	23,920	-42.0		352	13.2
25	21	25,180	-40.9		4	22.0
20	19	26,712	-40.1		2	23.5
15	13	28,753	-40.5			
10	6	31,579	-41.6			
7						
5						

NORFOLK, VA. (1019 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	3.8	77	315	3.7
1,000	31	159	4.1	71	314	5.6
950	31	576	2.8	65	291	8.7
900	31	1,013	1.8	61	281	11.9
850	31	1,473	.2	62	279	17.9
800	31	1,958	- 1.0	56	277	22.7
750	31	2,473	- 2.8	51	276	26.6
700	31	3,016	- 4.8	46	271	31.5
650	31	3,593	- 7.6	44	272	37.1
600	31	4,217	-10.7	42	277	43.7
550	31	4,875	-14.7	42	277	49.4
500	31	5,598	-19.0	41	277	52.7
450	31	6,370	-24.0	40	274	61.4
400	31	7,225	-29.8	39	274	64.9
350	31	8,164	-36.7		274	69.4
300	31	9,214	-44.4		275	73.8
250	31	10,414	-52.5		276	82.6
200	30	11,833	-57.1		278	76.0
175	27	12,664	-57.3		275	72.9
150	27	13,639	-57.7		278	72.7
125	27	14,784	-59.7		276	66.8
100	25	16,166	-62.2		274	55.2
80	25	17,539	-63.7		267	43.7
60	25	19,312	-61.9		261	32.3
50	25	20,446	-60.0		262	27.4
40	25	21,848	-57.3		263	22.9
30	25	23,682	-54.4		256	19.4
25	25	24,858	-52.6		255	18.8
20	25	26,310	-49.9		250	15.2
15	25	28,208	-46.2		244	19.6
10	25	30,945	-40.4		249	28.0
7	19	33,409	-37.7		246	36.5
5	12	35,802	-35.6			

NORTH PLATTE, NEBR. (918 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	848	-10.6	78	313	1.7
1,000	31	182				
950	31	581				
900	31	999	- 6.0	72	298	4.1
850	31	1,451	- 2.2	55	310	9.7
800	31	1,933	- 2.6	50	308	12.0
750	31	2,438	- 4.9	48	307	16.3
700	31	2,983	- 7.8	48	294	15.5
650	31	3,551	-11.1	48	288	18.8
600	31	4,166	-15.1	48	284	20.8
550	31	4,815	-19.0	44	284	26.6
500	31	5,523	-23.7	43	281	29.5
450	31	6,276	-29.2	41	279	29.3
400	31	7,118	-35.1	41	280	36.7
350	31	8,035	-41.9		279	40.6
300	31	9,062	-49.4		264	44.1
250	31	10,239	-55.3		266	46.8
200	31	11,651	-58.4		266	44.3
175	31	12,491	-58.3		269	47.2
150	31	13,462	-58.1		270	48.6
125	31	14,610	-58.4		269	47.0
100	30	16,010	-60.1		266	42.4
80	29	17,395	-61.5		269	39.4
60	29	19,179	-61.0		268	30.5
50	28	20,312	-61.2		264	27.2
40	26	21,710	-60.3		259	26.8
30	26	23,510	-59.0		263	26.4
25	25	24,664	-57.7		262	26.4
20	22	26,102	-54.6		258	26.0
15	18	27,975	-51.6		258	21.0
10						
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OAKLAND, CALIF. (1019 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	6	7.2	83	120	2.5
1,000	30	162	8.3	74	119	3.1
950	30	584	6.7	66	147	3.3
900	30	1,028	4.8	64	268	4.7
850	30	1,493	2.0	65	232	6.2
800	30	1,980	- .5	59	251	8.2
750	30	2,493	- 2.8	51	268	9.5
700	30	3,039	- 5.6	41	277	11.5
650	30	3,612	- 8.9	39	277	15.3
600	30	4,234	-12.7	41	278	17.9
550	30	4,888	-17.1	41	280	20.6
500	30	5,602	-22.0	41	279	22.7
450	30	6,362	-28.0	42	280	27.0
400	30	7,207	-33.5	43	277	29.1
350	30	8,135	-40.6		289	35.0
300	30	9,172	-48.4		285	34.8
250	30	10,359	-55.0		286	41.2
200	30	11,763	-60.3		289	41.6
175	30	12,598	-60.0		280	42.6
150	30	13,560	-58.8		277	39.4
125	30	14,705	-59.1		277	37.3
100	30	16,098	-61.1		277	33.4
80	28	17,478	-62.7		275	27.6
60	24	19,260	-62.1		278	19.6
50	24	20,388	-61.3		284	15.7
40	24	21,775	-60.2		290	12.0
30	23	23,576	-58.5		289	11.7
25	22	24,738	-57.7		296	10.7
20	19	26,141	-56.2		299	12.0
15	17	27,949	-54.4		305	12.6
10	11	30,604	-50.7			
7						
5						

OKLAHOMA CITY, OKLA. (973 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	392	- 0.2	84	322	0.8
1,000	31	172				
950	31	581	1.1	71	262	3.7
900	31	1,020	2.3	56	266	10.7
850	31	1,482	2.2	49	263	14.8
800	31	1,970	1.1	44	264	16.5
750	31	2,486	- .8	41	268	19.2
700	31	3,036	- 3.5	38	270	23.7
650	31	3,615	- 6.7	33	268	27.0
600	31	4,240	-10.1	33	265	32.1
550	31	4,900	-14.3	37	262	38.9
500	31	5,623	-18.8		262	47.0
450	31	6,395	-23.9		262	52.7
400	31	7,251	-29.9		259	59.1
350	31	8,188	-37.0		261	63.7
300	31	9,238	-44.5		260	72.7
250	31	10,437	-52.7		261	83.2
200	30	11,857	-58.5		261	83.2
175	30	12,695	-59.3		262	82.0
150	30	13,661	-59.4		263	82.2
125	29	14,799	-61.1		262	75.6
100	27	16,177	-64.7		261	65.7
80	25	17,525	-66.5		264	51.1
60	21	19,265	-65.2		266	37.1
50	18	20,377	-63.6		264	30.9
40	16	21,763	-61.0		262	30.1
30	15	23,567	-58.4		255	29.7
25	12	24,724	-55.9		242	27.6
20	7	26,162	-55.3			
15	6	28,019	-52.3			
10						
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OMAHA, NEBR. (970 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	403	- 8.2	82	326	2.3
1,000	31	167				
950	31	568	- 7.0	76	322	5.1
900	31	991	- 3.0	64	306	8.7
850	31	1,445	- 2.1	54	298	9.9
800	31	1,926	- 3.2	49	293	12.0
750	31	2,434	- 5.6	45	290	13.6
700	31	2,973	- 8.5	47	290	15.7
650	31	3,543	-11.7	48	286	19.2
600	31	4,154	-15.0	48	279	22.3
550	31	4,804	-19.0	47	278	26.2
500	31	5,511	-23.5	44	276	29.7
450	31	6,271	-28.9	41	275	33.6
400	31	7,106	-34.8	40	272	37.7
350	31	8,026	-40.9		269	43.5
300	31	9,060	-47.7		266	50.9
250	30	10,247	-54.2		265	58.3
200	30	11,666	-57.3		267	57.1
175	30	12,509	-57.6		266	54.2
150	29	13,477	-57.1		266	51.5
125	29	14,629	-57.5		266	50.7
100	29	16,033	-59.5		265	47.8
80	29	17,424	-60.4		265	42.4
60	28	19,216	-61.2		264	33.4
50	27	20,349	-60.4		257	30.3
40	26	21,736	-59.7		258	34.2
30	21	23,536	-59.0		262	28.8
25	18	24,695	-57.0		261	26.8
20	17	26,121	-54.8		258	29.3
15	10	27,993	-53.8		253	25.3
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PEORIA, ILL. (995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	201	- 4.5	81	283	2.1
1,000	31	162			298	5.4
950	31	566	- 3.9	71	279	8.0
900	31	994	- 3.2	62	281	13.4
850	31	1,448	- 2.3	56	278	17.9
800	31	1,929	- 3.3	49	277	19.8
750	31	2,436	- 5.5	48	278	21.6
700	31	2,977	- 8.2	46	278	24.3
650	31	3,546	-11.3	44	276	27.6
600	31	4,160	-14.6	42	274	32.4
550	31	4,806	-18.8	41	272	34.2
500	31	5,518	-23.4	37	273	38.7
450	30	6,273	-28.3	37	275	40.6
400	30	7,117	-33.8		276	46.0
350	30	8,041	-40.2		277	49.9
300	30	9,079	-46.4		276	57.3
250	30	10,271	-53.2		272	60.4
200	30	11,696	-56.5		273	67.2
175	30	12,543	-56.9		270	65.7
150	30	13,519	-57.0		270	66.8
125	30	14,671	-58.2		270	61.2
100	29	16,070	-59.7		269	59.3
80	28	17,459	-60.5		266	52.5
60	27	19,248	-60.5		264	41.0
50	26	20,386	-60.4		266	38.1
40	24	21,778	-59.7		261	34.2
30	20	23,551	-58.9		258	43.7
25	18	24,710	-58.0		257	40.0
20	17	26,135	-55.7		255	44.3
15	10	27,968	-54.1			
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PITTSBURGH, PA. (976 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	353	2.2	76	261	5.1
1,000	31	159				
950	31	568	- 2.1	72	257	8.0
900	31	994	- 3.7	75	266	14.2
850	31	1,445	- 5.0	71	276	18.7
800	31	1,921	- 6.6	66	278	24.3
750	31	2,427	- 7.1	57	281	25.3
700	31	2,961	- 9.4	53	281	28.8
650	31	3,532	-12.0	49	279	30.9
600	31	4,141	-15.2	43	278	36.7
550	31	4,794	-19.1	40	278	41.0
500	31	5,498	-23.4	39	278	41.8
450	31	6,259	-28.3	37	278	46.4
400	31	7,099	-33.9		276	46.0
350	31	8,023	-39.9		275	55.4
300	31	9,061	-46.9		276	59.1
250	31	10,252	-53.4		274	61.8
200	31	11,676	-56.6		279	57.7
175	30	12,512	-56.7		275	59.5
150	29	13,499	-56.9		275	61.2
125	27	14,658	-57.9		277	55.8
100	24	16,054	-60.2		279	51.3
80	23	17,439	-60.8		277	41.4
60	20	19,221	-59.2		277	28.2
50	16	20,359	-57.9			
40	15	21,781	-56.7			
30	14	23,608	-55.2			
25	11	24,784	-52.6			
20	10	26,253	-49.8			
15	7	28,204	-44.9			
10	7	30,946	-39.7			
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POINT ARGUELLO, CALIF. (1006 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	113	6.9	82	89	4.5
1,000	31	166	8.3	75	78	4.5
950	31	591	8.3	62	39	2.5
900	31	1,036	6.0	58	324	2.1
850	31	1,502	3.6	54	298	3.5
800	31	1,992	1.4	46	286	8.2
750	31	2,507	- .5	36	283	11.7
700	31	3,058	- 3.9	31	280	13.2
650	31	3,636	- 7.1	31	283	15.7
600	31	4,259	-10.8	34	288	19.2
550	31	4,920	-15.0	34	279	22.7
500	31	5,638	-19.6	34	280	26.0
450	31	6,406	-25.0	36	280	28.4
400	31	7,258	-31.2	35	276	34.0
350	31	8,191	-38.2		273	35.2
300	31	9,235	-46.2		269	39.1
250	31	10,425	-54.2		264	45.7
200	31	11,836	-59.2		266	49.2
175	31	12,672	-59.2		266	52.1
150	31	13,639	-59.2		264	53.2
125	31	14,778	-60.9		263	47.0
100	31	16,162	-62.3		264	41.6
80	31	17,532	-63.7		269	32.1
60	31	19,293	-63.6		266	23.5
50	31	20,413	-62.4		267	19.8
40	31	21,796	-60.7		267	17.5
30	31	23,592	-58.7		270	16.5
25	31	24,739	-57.5		265	17.9
20	29	26,155	-55.7		274	20.2
15	25	28,015	-53.5		266	19.2
10	21	30,640	-50.0		267	29.7
7	15	32,944	-49.0		268	40.6
5	8	35,175	-47.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JANUARY 1960

PORTLAND, ME. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	20	- 7.7	81	305	5.6
1,000	31	120			318	6.2
950	31	523	- 5.7	56	320	8.9
900	31	945	- 6.6	57	311	12.0
850	31	1,391	- 7.9	57	309	15.5
800	31	1,860	- 9.6	56	302	18.5
750	31	2,353	-11.0	53	292	23.5
700	31	2,886	-12.8	48	289	23.3
650	31	3,443	-15.8	46	282	27.2
600	31	4,049	-18.8	44	288	32.1
550	31	4,688	-22.3	38	284	36.1
500	31	5,387	-26.6	39	284	40.2
450	31	6,132	-31.7	39	281	43.3
400	31	6,966	-37.2		281	50.5
350	31	7,877	-43.1		285	54.4
300	31	8,904	-48.4		282	63.7
250	31	10,093	-52.9		281	59.5
200	30	11,518	-54.1		282	58.3
175	30	12,375	-53.8		282	52.1
150	28	13,362	-53.4		282	47.8
125	27	14,533	-54.3		278	44.3
100	27	15,959	-56.0		275	39.4
80	26	17,374	-56.6		274	37.5
60	26	19,200	-56.6		268	27.8
50	26	20,357	-56.8		263	26.2
40	26	21,774	-56.1		262	28.6
30	25	23,620	-53.8		257	32.8
25	24	24,799	-53.0		254	34.4
20	23	26,246	-51.0		253	40.6
15	19	28,142	-48.0		255	46.4
10	13	30,859	-43.7		262	64.9
7	6	33,382	-41.5			

RAPID CITY, S. DAK. (904 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	966	- 7.5	74	347	4.5
1,000	31	173				
950	31	578				
900	31	1,002			326	5.4
850	31	1,452	- 3.5	54	315	14.6
800	31	1,930	- 5.0	53	309	16.1
750	31	2,432	- 7.2	56	299	17.9
700	31	2,971	- 9.9	57	297	21.6
650	31	3,534	-13.3	56	287	24.3
600	31	4,146	-16.8	52	285	25.6
550	31	4,793	-21.0	47	284	28.8
500	31	5,493	-25.7	45	283	28.6
450	31	6,245	-31.1	44	282	32.1
400	31	7,075	-37.2	43	283	36.1
350	31	7,985	-44.0		280	39.1
300	31	9,004	-51.1		278	45.9
250	31	10,174	-56.6		272	48.0
200	31	11,582	-58.2		271	47.2
175	31	12,423	-57.9		271	46.4
150	31	13,396	-57.5		271	44.7
125	31	14,548	-57.8		272	40.4
100	31	15,953	-58.8		272	37.7
80	27	17,348	-59.8		266	33.8
60	22	19,179	-59.3		264	28.8
50	20	20,324	-59.4		268	23.3
40	18	21,733	-58.9		267	20.4
30	18	23,538	-59.0		268	20.4
25	16	24,709	-58.4		279	14.4
20	15	26,136	-57.5		293	11.7
15	10	28,028	-55.6			
10						
7						

ST. CLOUD, MINN. (980 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	316	-13.1	81	295	3.3
1,000	31	163				
950	31	565	-12.0	75	315	5.1
900	31	971	- 8.6	65	301	6.8
850	31	1,415	- 7.6	55	299	11.7
800	31	1,887	- 8.1	49	290	14.8
750	31	2,387	- 9.8	45	292	15.3
700	31	2,917	-12.1	49	289	19.6
650	31	3,476	-15.2	49	285	19.2
600	31	4,081	-18.7	50	279	22.0
550	31	4,724	-22.7	44	286	22.7
500	31	5,418	-27.3	43	280	26.2
450	31	6,168	-32.3	41	280	28.6
400	31	6,992	-38.0		270	26.2
350	31	7,900	-44.0		289	20.6
300	31	8,920	-50.3		283	23.5
250	31	10,095	-55.2		272	25.1
200	31	11,512	-57.4		276	28.2
175	31	12,357	-56.8		275	30.7
150	31	13,337	-55.9		271	29.0
125	30	14,492	-56.2		272	25.5
100	30	15,906	-57.4		274	29.0
80	27	17,304	-58.0		273	23.5
60	26	19,115	-58.8		264	22.3
50	23	20,252	-59.3		258	16.5
40	19	21,685	-58.4			
30	17	23,514	-56.5			
25	13	24,736	-54.6			
20	6	26,254	-49.2			
15	6	28,158	-45.7			
10						
7						

ST. PAUL IS., ALASKA (994 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	10	- 2.0	85	92	7.2
1,000	31	-40				
950	31	368	- 4.2	80	52	7.8
900	31	791	- 6.4	77	47	4.3
850	31	1,237	- 8.3	71	291	1.7
800	31	1,706	-10.5	62	264	3.1
750	31	2,198	-13.2	55	261	5.6
700	31	2,723	-16.1	46	251	4.7
650	31	3,275	-19.4	43	239	5.2
600	31	3,869	-23.2	45	234	3.7
550	31	4,494	-27.5	46	212	7.0
500	31	5,181	-32.0	46	222	8.5
450	31	5,910	-37.1		219	10.1
400	31	6,724	-42.5		225	7.4
350	31	7,616	-47.9		215	14.0
300	31	8,624	-51.8		211	11.7
250	30	9,792	-52.1		212	15.2
200	29	11,244	-50.0		202	13.8
175	29	12,120	-48.2		208	16.1
150	29	13,137	-47.6		206	15.7
125	29	14,344	-46.8		201	12.6
100	29	15,824	-47.0		173	12.8
80	28	17,297	-47.3		172	12.0
60	27	19,201	-47.1		152	8.9
50	26	20,413	-46.2		117	6.6
40	25	21,908	-45.1		111	7.8
30	23	23,837	-43.2		98	13.2
25	22	25,069	-42.3		88	16.1
20	19	26,555	-42.7			
15	14	28,565	-42.0			
10	5	31,047	-45.5			
7						

SALEM, OREG. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	61	1.5	89	201	1.2
1,000	31	153	1.8	84	173	1.0
950	31	569	2.9	77	180	5.4
900	31	1,005	1.7	72	196	11.7
850	31	1,465	- .1	68	218	13.8
800	31	1,948	- 2.7	69	229	15.3
750	31	2,457	- 5.5	68	238	16.1
700	31	2,995	- 8.7	67	244	15.7
650	31	3,562	-12.0	62	251	19.2
600	31	4,175	-15.8	59	261	17.7
550	31	4,821	-20.1	56	264	18.8
500	31	5,525	-24.8	54	263	20.4
450	31	6,279	-30.0	48	271	19.0
400	31	7,112	-35.9	48	278	22.5
350	31	8,028	-42.4		283	24.5
300	31	9,052	-49.9		288	28.6
250	31	10,226	-56.4		288	32.4
200	31	11,626	-60.5		287	32.6
175	29	12,459	-59.3		290	30.3
150	28	13,430	-58.1		285	27.0
125	26	14,570	-57.4		290	25.8
100	25	15,979	-57.9		285	22.0
80	23	17,390	-58.3		286	17.1
60	20	19,202	-58.0		308	14.0
50	18	20,349	-57.9		325	11.9
40	16	21,764	-57.9		327	13.4
30	13	23,613	-56.6		338	13.8
25	11	24,767	-56.5		346	13.4
20	10	26,221	-54.7			
15	9	28,039	-55.2			
10	6	30,692	-52.3			
7						

SALT LAKE CITY, UTAH (874 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,288	- 5.0	82	169	2.9
1,000	31	218				
950	31	627				
900	31	1,055				
850	31	1,508	- 3.0	71	176	5.6
800	31	1,989	- 3.8	62	190	10.1
750	31	2,498	- 6.6	62	217	8.2
700	31	3,033	- 9.6	65	257	9.9
650	31	3,602	-12.4	63	278	13.4
600	31	4,210	-16.2	60	271	16.7
550	31	4,859	-20.3	59	272	19.8
500	31	5,561	-24.6	57	273	23.9
450	31	6,318	-29.7	53	271	28.0
400	31	7,153	-35.7	49	272	30.5
350	31	8,070	-42.1		275	34.0
300	31	9,099	-48.5		275	39.8
250	31	10,282	-54.9		276	37.9
200	31	11,692	-59.1		273	40.6
175	31	12,530	-58.3		272	40.2
150	31	13,503	-57.7		271	39.6
125	31	14,652	-58.0		268	36.9
100	30	16,054	-59.5		269	33.8
80	29	17,447	-60.7		267	29.3
60	25	19,230	-60.6		269	22.3
50	26	20,365	-60.4		274	19.6
40	21	21,767	-59.3		272	16.7
30	16	23,605	-58.4		271	13.8
25	10	24,759	-57.5		277	14.4
20	10	26,171	-56.5		281	18.1
15	8	28,042	-52.6			
10						
7						

SAN ANTONIO, TEX. (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	243	6.5	83	8	2.5
1,000	31	176				
950	31	602	8.5	69	91	1.4
900	31	1,047	8.8	56	204	7.2
850	31	1,520	7.8	51	239	11.7
800	31	2,018	6.1	42	243	13.0
750	31	2,544	4.8	33	257	18.5
700	31	3,107	2.6		254	23.3
650	31	3,699	- .9		253	28.8
600	31	4,338	- 4.6		256	31.5
550	31	5,011	- 9.1		264	32.3
500	31	5,749	-13.9		266	35.4
450	31	6,536	-19.4		262	32.1
400	31	7,408	-25.2		267	35.9
350	30	8,369	-31.5			
300	29	9,443	-39.8			
250	29	10,663	-49.5			
200	26	12,106	-57.1			
175	19	12,948	-59.8			
150	16	13,912	-62.5			
125	9	15,056	-66.0			
100	5	16,413	-70.8			
80						
60						
50						
40						
30						
25						
20						
15						
10						
7						

SAN DIEGO, CALIF. (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	124	6.6	86	31	1.9
1,000	31	157			48	2.5
950	31	585	9.4	57	240	.8
900	31	1,031	7.2	54	271	3.1
850	31	1,500	4.8	48	278	4.5
800	31	1,992	2.4	45	279	6.2
750	31	2,509	- .2	42	286	9.5
700	31	3,062	- 3.0	39	283	12.8
650	31	3,643	- 6.4	36	278	16.3
600	31	4,269	-10.2	32	273	19.8
550	31	4,931	-14.2	28	270	23.1
500	31	5,653	-19.0	29	267	27.0
450	31	6,422	-24.3		267	30.7
400	31	7,281	-30.3		267	33.2
350	31	8,219	-36.9		268	40.2
300	31	9,269	-44.5		269	46.8
250	31	10,468	-52.6		267	52.5
200	30	11,895	-58.0		264	60.0
175	29	12,733	-58.8		260	61.0
150	28	13,702	-59.7		264	63.1
125	24	14,829	-61.1		265	56.0
100	22	16,201	-63.4		268	45.9
80	16	17,574	-64.1		268	37.1
60	10	19,344	-62.8			
50	[illegible]	20,467	-61.9			
40	8	21,855	-59.5			
30	8	23,665	-57.5			
25	6	24,803	-55.8			
20	6	26,226	-54.8			
15	5	28,043	-52.5			
10						
7						

SAN JUAN, P. R. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	21.7	87	103	1.6
1,000	31	145	23.3	76	87	10.1
950	31	592	20.5	77	90	13.0
900	31	1,057	17.4	77	86	11.5
850	31	1,543	14.3	73	84	9.9
800	31	2,053	12.0	62	83	7.6
750	31	2,593	10.0	46	88	5.2
700	31	3,164	7.8	30	88	5.8
650	31	3,770	5.4		72	6.4
600	31	4,421	2.0		53	4.1
550	31	5,113	- 2.1		12	2.9
500	31	5,868	- 7.0		337	3.3
450	31	6,675	-12.8		317	6.2
400	31	7,569	-19.8		324	11.5
350	31	8,544	-26.8		300	16.9
300	31	9,639	-35.1		292	20.4
250	31	10,885	-44.1		284	29.7
200	31	12,350	-54.0		285	37.7
175	31	13,196	-59.4		289	38.9
150	30	14,147	-65.4		291	32.1
125	30	15,243	-70.9		299	28.2
100	29	16,544	-76.5		303	19.6
80	28	17,817	-79.4		309	10.7
60	28	19,469	-73.0		326	5.4
50	28	20,553	-67.6		327	3.1
40	25	21,913	-61.3		313	6.0
30	23	23,726	-56.1		317	4.9
25	22	24,896	-53.5		36	5.1
20	17	26,353	-50.2		86	14.4
15	13	28,266	-45.8		102	20.4
10	13	30,990	-41.4		94	20.0
7	8	33,448	-36.7			

SANTA MONICA, CALIF. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	38	9.0	67	20	5.6
1,000	31	162	10.6	55	27	6.2
950	31	586	8.7	50	57	3.9
900	31	1,033	6.4	50	121	1.9
850	31	1,500	3.9	46	225	2.1
800	31	1,991	1.4	43	270	5.1
750	31	2,505	- .8	37	270	8.0
700	31	3,057	- 3.9	35	276	13.4
650	31	3,631	- 7.6	36	279	16.7
600	31	4,257	-11.5	34	282	19.4
550	31	4,915	-15.6	30	282	22.0
500	31	5,633	-19.9		285	26.8
450	31	6,399	-25.2		280	29.0
400	31	7,254	-31.1		282	34.6
350	31	8,188	-38.0		281	34.2
300	31	9,232	-45.9		279	40.0
250	31	10,423	-53.9		276	48.2
200	31	11,838	-58.8		271	56.0
175	30	12,684	-59.6		267	55.8
150	30	13,647	-60.0		265	54.8
125	29	14,781	-61.6		267	52.5
100	28	16,158	-63.7		266	39.2
80	28	17,519	-65.2		264	33.2
60	24	19,271	-63.8		265	22.7
50	22	20,401	-62.3		263	16.7
40	21	21,785	-60.6		257	12.0
30	20	23,581	-58.8		276	9.9
25	20	24,728	-57.8		286	10.9
20	17	26,156	-55.7		272	9.1
15	14	28,019	-53.2		270	10.9
10	5	30,687	-52.0			
7						

SAULT STE. MARIE, MICH. (989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	221	- 8.5	82	350	1.0
1,000	31	137				
950	31	535	- 8.8	79	262	3.7
900	31	952	- 9.6	79	299	9.3
850	31	1,393	-10.3	79	291	13.4
800	31	1,859	-11.3	75	287	15.5
750	31	2,352	-12.6	65	286	17.9
700	31	2,878	-14.8	57	283	21.2
650	31	3,433	-17.6	53	281	24.3
600	31	4,032	-20.9	49	282	27.6
550	31	4,665	-24.5	49	280	32.1
500	31	5,359	-28.8	48	282	37.3
450	31	6,099	-33.8	51	281	41.4
400	31	6,923	-39.3		277	44.7
350	31	7,826	-45.2		278	49.9
300	31	8,841	-51.3		276	51.9
250	31	10,013	-55.2		274	55.0
200	31	11,432	-55.8		276	48.4
175	29	12,295	-55.8		278	43.7
150	29	13,275	-55.9		277	42.2
125	28	14,437	-56.2		276	41.0
100	27	15,845	-57.7		274	35.4
80	24	17,247	-58.2		268	32.6
60	24	19,051	-59.6		266	30.7
50	22	20,178	-59.6		263	30.9
40	21	21,562	-60.1		263	30.5
30	19	23,365	-58.5		259	39.2
25	17	24,522	-57.2		261	42.6
20	14	25,939	-55.3		258	51.5
15	9	27,847	-49.7			
10						

SEATTLE, WASH. (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	125	2.7	81	92	6.4
1,000	31	146			92	5.1
950	31	560	2.5	71	165	8.5
900	31	997	.2	71	196	8.4
850	31	1,453	- 2.5	71	217	10.9
800	31	1,932	- 4.9	71	221	13.6
750	31	2,437	- 7.7	66	230	14.2
700	31	2,971	-10.3	64	247	13.4
650	31	3,535	-13.6	59	254	15.2
600	31	4,143	-17.3	54	263	16.7
550	31	4,786	-21.3	50	270	17.7
500	31	5,487	-26.1	49	276	20.8
450	31	6,233	-31.3	48	272	23.5
400	31	7,067	-36.8	44	284	24.3
350	31	7,979	-43.4		287	27.0
300	31	9,000	-50.4		282	31.9
250	31	10,171	-57.1		291	37.1
200	31	11,570	-60.2		288	35.0
175	31	12,403	-59.3		286	30.5
150	31	13,373	-57.3		288	29.0
125	31	14,526	-57.5		285	23.7
100	30	15,938	-57.4		288	20.6
80	28	17,343	-58.2		294	18.8
60	27	19,148	-58.3		306	17.7
50	25	20,285	-58.1		323	15.2
40	25	21,692	-57.9		333	16.7
30	23	23,509	-57.0		351	20.4
25	21	24,677	-56.4		356	23.5
20	18	26,101	-55.9		14	27.4
15	6	27,995	-54.2			
10						

SHEMYA, ALASKA (984 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	27	37	- 0.3	83	1	7.8
1,000	27	-93				
950	27	314	- 2.6	83	65	9.1
900	27	746	- 5.6	83	61	8.0
850	27	1,191	- 8.6	81	78	4.7
800	27	1,659	-11.6	74	84	3.5
750	27	2,150	-15.1	68	76	2.7
700	27	2,669	-18.6	67	139	1.6
650	27	3,214	-22.3	62	135	1.4
600	27	3,801	-26.4	56	182	2.9
550	27	4,422	-30.9	55	153	3.1
500	27	5,095	-35.4	58	155	4.5
450	27	5,812	-40.1		151	5.8
400	27	6,612	-45.5		183	6.0
350	26	7,493	-50.7		183	8.4
300	26	8,489	-53.7		182	14.0
250	26	9,668	-52.2		180	13.6
200	26	11,121	-49.9		188	13.8
175	25	11,999	-48.7		201	17.3
150	25	13,014	-48.1		188	15.3
125	25	14,219	-46.8		184	14.0
100	24	15,697	-46.3		193	14.0
80	23	17,172	-47.4		183	14.4
60	18	19,071	-46.7		159	13.0
50	18	20,283	-46.1		159	14.2
40	18	21,767	-46.3		120	15.2
30	18	23,686	-44.5		106	19.6
25	15	24,870	-45.2		96	23.7
20	15	26,366	-43.9		93	27.8
15	14	28,298	-42.8		91	34.6
10	9	31,030	-42.5			

SHREVEPORT, LA. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	76	4.9	84		0.0
1,000	31	176	5.5	75	313	1.0
950	31	598	5.2	66	262	4.3
900	31	1,038	5.5	56	264	9.9
850	31	1,505	4.5	49	272	14.4
800	31	1,998	3.2	44	278	18.1
750	31	2,519	1.5	41	274	24.9
700	31	3,074	- .7	38	266	28.0
650	31	3,660	- 2.9		263	31.5
600	31	4,295	- 6.5		260	36.7
550	31	4,964	-10.8		264	40.8
500	31	5,697	-15.7		263	44.9
450	31	6,478	-21.0		264	50.5
400	31	7,346	-27.2		262	55.2
350	31	8,294	-34.0		261	60.4
300	31	9,357	-41.7		262	70.7
250	31	10,569	-50.7		264	75.4
200	31	11,995	-58.1		265	84.5
175	31	12,833	-59.0		262	81.2
150	31	13,796	-60.9		261	81.2
125	30	14,918	-63.3		264	71.5
100	30	16,275	-67.7		262	63.5
80	29	17,613	-69.7		264	49.7
60	28	19,332	-67.2		265	32.1
50	28	20,436	-65.2		261	24.9
40	28	21,803	-62.3		255	18.7
30	22	23,605	-59.0		259	15.2
25	19	24,767	-56.5		255	10.1
20	15	26,180	-54.4		259	6.0
15	9	28,047	-51.3			
10						

SPOKANE, WASH. (934 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	722	- 5.2	87	116	1.0
1,000	31	185				
950	31	590				
900	31	1,017	- 3.4	78	159	7.2
850	31	1,468	- 4.2	71	237	6.2
800	31	1,944	- 6.0	68	254	8.5
750	31	2,446	- 8.7	64	275	12.6
700	31	2,979	-11.6	60	266	12.8
650	31	3,539	-14.5	56	276	14.4
600	31	4,147	-18.1	54	276	17.7
550	31	4,787	-22.3	50	275	20.4
500	31	5,486	-26.9	48	280	22.2
450	31	6,230	-31.9	45	281	26.0
400	31	7,057	-38.0		284	29.9
350	31	7,969	-44.1		285	33.4
300	31	8,988	-50.8		285	35.0
250	31	10,160	-56.6		289	41.6
200	31	11,566	-58.8		290	34.0
175	30	12,402	-57.5		284	30.1
150	29	13,385	-56.6		284	25.1
125	29	14,542	-56.6		281	25.1
100	29	15,956	-57.3		286	21.8
80	26	17,362	-57.8		294	19.2
60	26	19,173	-58.0		305	15.2
50	24	20,317	-58.2		318	14.4
40	23	21,727	-57.9		335	14.2
30	22	23,545	-57.5		354	16.9
25	18	24,710	-56.8		350	16.5
20	14	26,202	-55.0		7	17.1
15	12	28,065	-55.5		8	17.9
10	[illegible]	30,715	-53.6			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	SWAN ISLAND, W. I. (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	10	24.7	80	58	10.9
1,000--	31	137	23.6	80	51	10.1
950----	31	581	19.6	82	66	13.0
900----	31	1,048	16.3	79	68	11.5
850----	31	1,533	13.5	77	67	8.4
800----	31	2,042	11.3	68	75	5.6
750----	31	2,576	9.3	55	90	6.0
700----	31	3,150	7.1	38	98	7.0
650----	31	3,746	4.3		94	7.2
600----	31	4,404	.7		95	7.6
550----	31	5,089	- 3.3		88	5.2
500----	31	5,846	- 7.6		123	1.6
450----	31	6,650	-13.1		42	.6
400----	31	7,546	-19.7		276	6.2
350----	31	8,522	-27.1		274	15.5
300----	30	9,613	-35.6		274	24.5
250----	30	10,857	-44.8		262	33.6
200----	30	12,316	-55.3		255	39.2
175----	30	13,158	-60.9		254	35.0
150----	28	14,104	-66.6		251	31.7
125----	25	15,192	-72.7		258	24.5
100----	25	16,485	-77.9		272	8.2
80-----	20	17,743	-80.0		73	8.4
60-----	20	19,394	-73.6		73	7.4
50-----	20	20,469	-69.8			.0
40-----	20	21,818	-63.6		280	2.5
30-----	20	23,609	-57.4		321	4.1
25-----	20	24,767	-54.7		13	4.7
20-----	19	26,206	-51.6		39	4.1
15-----	15	28,078	-46.8		90	13.8
10-----	8	30,737	-43.4			

Standard pressure surface (mb.)	TAMPA, FLA. (1020 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	8	11.3	85	5	4.5
1,000--	31	173	13.7	74	104	2.9
950----	30	608	12.4	64	214	5.2
900----	30	1,059	11.6	51	244	8.4
850----	30	1,536	10.2	49	264	10.9
800----	30	2,039	8.2	49	268	14.4
750----	30	2,573	6.4	45	272	18.1
700----	30	3,133	3.6	39	268	21.4
650----	30	3,733	.4	35	267	23.5
600----	30	4,369	- 3.3	31	268	28.6
550----	30	5,050	- 7.6	33	275	32.8
500----	30	5,787	-12.5		273	36.9
450----	30	6,583	-18.1		263	40.6
400----	30	7,454	-24.4		272	43.3
350----	30	8,414	-31.6		271	47.2
300----	30	9,488	-39.9		276	49.0
250----	30	10,710	-49.0			
200----	30	12,149	-56.4			
175----	29	12,995	-59.1			
150----	29	13,955	-62.3			
125----	28	15,066	-67.7			
100----	23	16,380	-73.3			
80-----	21	17,696	-74.7			
60-----	19	19,381	-71.4			
50-----	19	20,465	-68.3			
40-----	19	21,823	-62.7			
30-----	17	23,622	-57.3			
25-----	15	24,784	-54.7			
20-----	14	26,225	-50.8			
15-----	10	28,102	-45.6			
10-----	8	30,822	-42.4			

Standard pressure surface (mb.)	TATOOSH IS., WASH. (1012 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	31	5.4	80	109	13.0
1,000--	30	128	4.9	76	122	13.8
950----	30	544	2.9	72	160	12.0
900----	30	981	.5	73	187	13.4
850----	30	1,438	- 2.2	73	200	12.2
800----	30	1,918	- 4.4	68	213	13.6
750----	30	2,419	- 6.8	64	230	11.3
700----	30	2,960	-10.0	60	239	13.2
650----	30	3,520	-13.3	54	239	13.6
600----	30	4,133	-16.9	52	248	15.5
550----	30	4,773	-21.0	46	256	17.9
500----	30	5,479	-25.8	47	261	20.2
450----	30	6,225	-31.3	46	266	22.3
400----	30	7,061	-36.6	47	280	22.0
350----	30	7,973	-43.2		270	25.8
300----	30	8,995	-50.3		265	29.7
250----	30	10,166	-57.3		274	31.9
200----	26	11,548	-60.5		267	28.8
175----	25	12,372	-59.1		272	29.1
150----	24	13,342	-57.1		279	24.3
125----	23	14,495	-56.5		282	22.2
100----	23	15,909	-56.9		283	19.4
80-----	23	17,321	-57.3		296	19.0
60-----	22	19,136	-57.3		321	14.6
50-----	18	20,299	-57.6		340	16.3
40-----	15	21,703	-57.2		355	17.1
30-----	13	23,531	-56.6		9	21.6
25-----	10	24,660	-57.2			
20-----	8	26,116	-56.3			
15-----	5	27,986	-57.5			
10-----						

Standard pressure surface (mb.)	TOPEKA, KANS (988 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	269	- 4.5	81	349	4.9
1,000--	31	174				
950----	31	581	- 3.6	74	304	3.7
900----	31	1,008	- 1.4	65	310	7.0
850----	31	1,464	- 1.3	53	283	9.9
800----	31	1,947	- 2.1	48	287	13.6
750----	31	2,454	- 4.3	46	279	16.5
700----	31	2,999	- 6.6	42	276	19.4
650----	31	3,570	- 9.4	41	279	24.5
600----	31	4,189	-12.7	38	275	28.0
550----	31	4,845	-16.8	35	275	30.3
500----	31	5,557	-21.8		272	35.8
450----	31	6,316	-27.1		271	39.1
400----	31	7,163	-32.9		269	45.1
350----	31	8,090	-39.3		267	54.0
300----	31	9,130	-46.3		268	60.4
250----	31	10,321	-53.5		270	64.1
200----	30	11,742	-57.9		269	66.6
175----	30	12,585	-57.9		270	70.3
150----	29	13,561	-57.9		268	65.5
125----	28	14,712	-59.2		267	58.3
100----	28	16,104	-61.0		265	53.4
80-----	28	17,485	-62.5		266	45.9
60-----	26	19,252	-62.5		267	36.5
50-----	26	20,380	-61.9		261	33.4
40-----	24	21,765	-61.0		258	29.9
30-----	17	23,590	-57.9		262	27.4
25-----	17	24,744	-56.1		262	26.0
20-----	15	26,172	-55.1		249	30.3
15-----	10	28,032	-52.6			
10-----	5	30,796	-46.8			

Standard pressure surface (mb.)	TUCSON, ARIZ. (927 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	781	3.7	72	140	5.2
1,000--	31	167				
950----	31	586				
900----	31	1,030	7.4	48	135	7.2
850----	31	1,500	6.0	41	[illegible]	3.7
800----	31	1,994	3.4	38	227	[illegible]
750----	31	2,511	.6	37	251	9.3
700----	31	3,066	- 2.3	34	259	14.0
650----	31	3,645	- 5.4		262	20.2
600----	31	4,276	- 8.9		270	25.5
550----	31	4,935	-12.8		259	27.6
500----	31	5,666	-17.6		256	35.2
450----	31	6,438	-22.9		260	37.9
400----	31	7,302	-28.9		257	43.9
350----	31	8,244	-35.8		263	45.5
300----	31	9,298	-43.6		262	53.6
250----	31	10,501	-52.0		259	63.9
200----	31	11,926	-57.4		258	70.5
175----	31	12,767	-58.7		258	69.6
150----	31	13,732	-60.1		257	68.0
125----	28	14,875	-62.5		256	60.6
100----	28	16,242	-65.5		255	53.0
80-----	25	17,591	-66.9		254	43.3
60-----	23	19,333	-65.0		255	35.4
50-----	23	20,449	-63.4		258	19.4
40-----	22	21,822	-61.5		252	17.9
30-----	18	23,617	-58.3		262	17.7
25-----	18	24,767	-57.2		260	17.7
20-----	17	26,180	-54.8		257	29.7
15-----	15	28,015	-51.9		246	33.4
10-----	12	30,658	-47.9			

Standard pressure surface (mb.)	WASHINGTON, D. C. (1008 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	88	0.4	74	282	2.1
1,000--	31	155			291	3.9
950----	31	568	.5	65	281	10.3
900----	31	1,000	- 1.0	62	288	14.8
850----	31	1,455	- 2.4	62	291	20.0
800----	31	1,935	- 3.6	58	287	23.7
750----	31	2,444	- 4.6	54	277	27.8
700----	31	2,986	- 6.7	47	276	30.5
650----	31	3,559	- 9.5	47	276	34.6
600----	31	4,178	-12.9	42	278	39.2
550----	31	4,832	-16.8	41	276	44.5
500----	31	5,547	-21.2	42	276	48.2
450----	31	6,312	-26.2	40	275	55.4
400----	31	7,160	-31.8	41	278	50.1
350----	31	8,091	-38.3		278	52.1
300----	31	9,135	-45.6		280	49.9
250----	31	10,331	-52.8		278	58.9
200----	31	11,754	-56.9		280	63.7
175----	31	12,599	-57.3		272	53.6
150----	30	13,570	-57.4		273	56.7
125----	30	14,718	-58.9		276	51.9
100----	30	16,112	-60.9		270	40.4
80-----	30	17,492	-62.5		270	38.7
60-----	30	19,272	-61.3		271	30.5
50-----	29	20,406	-59.4		268	23.7
40-----	29	21,809	-57.5		262	20.8
30-----	28	23,640	-54.6		247	22.5
25-----	25	24,816	-53.5		245	19.0
20-----	21	26,281	-50.6		252	12.4
15-----	18	28,154	-47.8		248	14.2
10-----	8	30,845	-40.7			
7------	7	33,308	-36.5			

Standard pressure surface (mb.)	WINNEMUCCA, NEV. (871 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,310	- 6.6	82	90	2.9
1,000--	31	216				
950----	31	619				
900----	31	1,050				
850----	31	1,502	- 2.4	74	145	4.3
800----	31	1,983	- 3.4	69	218	5.8
750----	31	2,488	- 5.7	68	245	9.3
700----	31	3,030	- 8.3	64	262	12.4
650----	31	3,591	-11.7	63	271	13.8
600----	31	4,210	-15.3	62	276	16.1
550----	31	4,856	-19.0	57	282	20.6
500----	31	5,567	-23.5	56	282	27.8
450----	31	6,318	-28.9	54	290	26.0
400----	31	7,162	-34.9	48	288	25.8
350----	31	8,081	-41.6		286	30.5
300----	31	9,110	-48.9		287	31.3
250----	31	10,289	-55.9		289	33.4
200----	30	11,687	-60.8		286	37.7
175----	29	12,517	-59.3		282	32.1
150----	28	13,481	-57.8		278	32.3
125----	28	14,631	-58.3		277	29.7
100----	28	16,032	-59.8		277	26.4
80-----	27	17,417	-60.7		277	23.9
60-----	23	19,220	-60.3		274	18.5
50-----	18	20,347	-60.0		274	16.5
40-----	16	21,734	-59.3		280	13.6
30-----	13	23,533	-58.6		298	15.2
25-----	12	24,689	-57.9		305	17.7
20-----	11	26,079	-56.5		304	16.3
15-----	7	27,846	-55.2			

Standard pressure surface (mb.)	YAKUTAT, ALASKA (1008 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	12	- 3.5	88	96	6.6
1,000--	30	72			83	4.3
950----	30	484	- .4	76	123	4.7
900----	30	915	- 2.1	72	136	5.8
850----	30	1,367	- 4.5	69	148	4.3
800----	30	1,843	- 7.1	65	227	2.7
750----	30	2,342	- 9.8	60	263	7.2
700----	30	2,874	-12.6	53	271	9.9
650----	30	3,433	-16.0	46	277	11.7
600----	30	4,036	-20.1	44	281	11.9
550----	30	4,672	-24.4	43	285	14.0
500----	30	5,364	-29.1	44	290	17.9
450----	30	6,106	-34.3	43	295	22.2
400----	30	6,926	-40.3		303	30.7
350----	30	7,826	-46.1		298	27.8
300----	30	8,838	-51.8		297	27.8
250----	30	10,008	-56.0		310	26.2
200----	29	11,422	-55.1			
175----	29	12,279	-53.2			
150----	29	13,276	-51.8			
125----	29	14,459	-51.6			
100----	29	15,906	-52.0			
80-----	28	17,351	-51.1			
60-----	27	19,211	-51.1			
50-----	27	20,397	-50.9			
40-----	26	21,840	-50.8			
30-----	25	23,702	-50.1			
25-----	22	24,931	-49.4			
20-----	20	26,393	-49.2			
15-----	16	28,308	-49.3			
10-----	7	30,882	-52.2			

Note: All observations scheduled at 1200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun.

JANUARY 1960

ALBUQUERQUE, N. MEX. †

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Jan.									
2	0.98	1.11	1.23	1.36	1.40	1.33	1.23	1.09	1.00
4	1.04	1.14	1.25	1.40	1.41	1.36	1.22	1.09	.95
5	.96	1.06	1.18	1.33	1.35	1.35	1.19	1.10	.99
6	1.01	1.07	1.22	1.34	1.27	1.29	1.21	1.08	.98
7	1.01	1.11	1.23	1.36	1.39	1.35	1.24	1.12	1.01
8	1.02	1.11	1.23	1.35	1.35	1.31	1.21	1.11	1.03
9	1.02	1.13	1.25	1.35	1.31	1.35	1.16	1.09	.98
12	----	----	----	1.31	1.33	----	----	----	----
13	.99	----	----	1.37	1.37	1.35	----	----	----
15	1.04	1.12	1.21	1.35	1.38	1.39	1.25	1.13	1.04
17	----	----	----	1.31	----	----	----	----	----
18	1.03	1.14	1.27	1.41	1.43	1.40	1.27	1.08	----
19	----	----	----	----	----	----	1.22	1.09	.98
20	1.01	1.10	1.19	1.35	1.40	1.32	----	----	1.00
21	1.05	1.14	1.25	1.37	----	1.35	----	----	----
22	1.00	1.10	1.18	----	----	----	----	----	----
23	----	----	----	----	1.37	1.25	----	----	----
24	----	----	----	1.34	1.39	1.34	1.12	1.00	.91
25	----	----	----	----	----	1.29	1.23	1.11	.99
26	.95	1.05	1.17	1.32	1.34	----	1.13	----	----
28	----	1.05	1.13	1.32	1.35	1.29	1.14	1.05	.92
29	.97	1.09	1.20	1.33	1.44	1.28	1.03	.89	.81
30	----	----	----	1.29	1.39	----	----	1.08	.97
31	----	----	----	----	1.39	1.30	----	.95	.87
Averages	1.00	1.10	1.21	1.35	1.37	1.34	1.21	1.07	.97

TUCSON, ARIZ.

Date	Air mass								
	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Jan.									
4	----	----	----	----	1.45	1.37	1.19	H 1.04	H 0.95
5	0.96	1.07	1.21	1.36	----	1.37	1.22	1.09	1.02
6	.99	1.09	1.21	1.41	1.44	1.39	1.18	1.05	.93
7	.98	1.06	H 1.19	1.36	1.43	H 1.31	1.26	1.14	1.05
8	1.05	1.15	1.25	1.41	1.46	1.39	1.17	H 1.05	H .93
17	1.05	1.17	1.27	1.43	----	----	----	----	----
19	1.08	H 1.14	1.23	1.41	1.48	1.41	1.22	1.11	1.03
23	1.03	1.15	1.23	1.39	1.46	1.37	1.21	1.09	1.01
24	1.06	1.16	1.27	H 1.36	1.49	----	----	----	----
29	1.06	1.15	1.26	1.43	1.48	1.35	----	----	----
30	H .92	H 1.03	H 1.17	----	----	----	----	----	----
Averages	1.02	1.12	1.23	1.40	1.46	1.37	1.21	1.08	0.99

MAUNA LOA OBS., HAWAII

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Jan.									
1	1.28	1.36	1.45	1.56	1.66	----	----	----	----
2	----	----	----	----	----	1.56	1.45	1.35	1.24
3	1.35	1.44	1.52	1.62	1.66	----	1.39	1.23	1.06
5	1.32	1.41	1.50	1.61	1.69	1.57	1.40	1.22	1.06
6	1.35	1.44	1.52	1.63	1.67	1.57	1.48	----	----
7	1.27	1.36	1.45	1.56	----	----	----	----	----
8	----	----	----	----	----	----	1.46	1.37	1.27
9	1.27	1.36	1.45	1.56	1.71	----	----	----	1.25
10	1.28	1.37	1.47	1.57	----	----	----	----	----
11	1.29	1.37	1.47	1.57	1.66	----	----	----	----
12	1.30	1.39	1.48	1.59	----	----	----	----	----
13	1.27	1.40	1.45	1.57	----	----	----	----	----
14	----	1.34	1.44	1.56	----	----	----	----	----
15	1.26	1.34	1.45	1.57	----	----	----	----	----
16	1.26	1.36	1.45	1.56	1.67	1.59	1.49	1.40	1.31
17	1.36	1.44	1.53	1.65	1.74	1.64	1.54	1.44	1.36
18	1.35	1.42	1.51	1.63	1.72	1.61	1.51	1.41	1.34
20	1.38	1.45	1.54	1.65	K 1.70	K 1.51	K 1.30	K 1.28	K 1.18
21	1.33	1.41	1.50	1.61	K 1.70	K 1.58	K 1.50	K 1.40	K 1.34
22	1.28	1.37	1.47	1.60	K 1.70	K 1.63	K 1.31	K 1.17	K 1.06
23	1.40	1.46	1.55	1.64	K 1.68	K 1.36	K 1.26	K 1.12	K 1.07
24	1.35	1.44	1.54	1.63	K 1.68	K 1.61	1.49	1.38	1.30
25	1.34	1.43	1.51	1.62	1.71	K 1.59	K 1.47	K 1.38	K 1.29
26	1.32	1.40	1.50	1.61	1.71	K 1.60	K 1.48	K 1.37	K 1.28
27	1.32	1.41	1.51	1.62	1.73	1.62	1.51	1.41	1.33
28	1.33	1.42	1.50	1.61	1.71	1.60	1.49	1.39	1.31
29	----	----	1.50	1.61	1.70	1.59	1.48	1.38	1.29
30	1.30	1.39	1.48	1.59	K 1.70	K 1.50	K 1.24	K 1.27	K 1.21
31	1.29	1.38	1.48	1.59	K 1.58	----	----	----	----
Averages	1.31	1.40	1.49	1.60	1.69	1.57	1.43	1.33	1.24

BLUE HILL, MASS.

Date	Air mass								
	4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Jan.									
16	1.06	1.12	1.24	----	----	----	----	----	----
17	.98	1.08	1.22	----	----	----	1.22	1.17	1.01
24	.95	1.05	1.22	----	1.24	----	----	----	----
Averages	1.00	1.08	1.23	----	1.24	----	1.22	1.17	1.01

* Values corresponding to true solar noon.
† Data should be considered doubtful due to moisture in instrument.
H Haze.
K Smoke.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Albuquerque, N.Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area	Cape Hatteras, N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.	Davis, Calif.
Jan. 1-----	232	36	40	---	149	39	11	82	210	207	215	144	608	221	174	78	176	92	31	267
Jan. 2-----	339	40	100	---	47	13	54	130	207	---	208	197	675	277	111	50	28	91	161	194
Jan. 3-----	284	227	28	---	164	296	10	174	43	188	48	249	501	58	21	184	14	253	69	264
Jan. 4-----	353	227	21	---	---	232	8	---	152	182	154	41	640	283	126	304	80	209	119	264
Jan. 5-----	339	233	43	144	56	78	11	129	130	184	131	54	---	294	158	98	127	87	59	248
Jan. 6-----	340	212	34	141	73	25	11	---	162	87	170	185	421	37	149	26	118	266	34	168
Jan. 7-----	336	188	41	203	102	83	10	183	148	64	139	387	367	60	184	---	89	241	42	89
Average-------	318	166	44		99	109	16	140	150	152	152	179	535	176	132	123	90	177	74	213
Jan. 8-----	334	204	47	337	126	321	30	110	149	45	147	263	(559)	346	124	326	168	230	84	83
Jan. 9-----	341	171	5	374	154	294	14	55	224	80	228	200	531	346	184	331	166	244	51	41
Jan. 10-----	186	82	92	324	20	275	17	202	41	71	59	192	(574)	221	192	167	19	54	27	87
Jan. 11-----	75	(24)	78	371	95	272	41	133	241	73	241	271	612	265	191	316	106	40	44	52
Jan. 12-----	248	24	10	362	81	74	45	175	228	190	222	293	608	176	200	230	6	79	174	286
Jan. 13-----	291	38	20	336	22	---	32	150	76	---	78	239	(425)	188	190	293	7	31	88	256
Jan. 14-----	167	16	37	293	66	113	17	197	227	---	215	338	613	262	193	233	21	33	133	71
Average-------	235	(80)	41	342	80	225	28	146	169	92	170	257	(560)	258	182	271	70	102	86	125
Jan. 15-----	361	242	73	279	---	329	47	147	53	---	53	387	547	182	85	141	8	43	93	282
Jan. 16-----	127	298	37	402	25	284	16	146	236	---	237	163	622	347	57	342	38	245	37	286
Jan. 17-----	297	99	16	326	155	19	23	104	235	---	225	300	533	304	96	229	---	55	57	227
Jan. 18-----	380	167	106	178	63	260	19	160	119	---	136	416	620	53	187	110	22	120	49	99
Jan. 19-----	322	256	51	426	15	234	24	129	179	---	166	190	663	370	40	---	92	225	79	227
Jan. 20-----	365	293	143	335	105	343	30	211	247	---	249	176	654	389	89	347	168	319	120	180
Jan. 21-----	349	(209)	79	444	124	364	18	152	83	---	103	248	656	381	108	373	162	317	200	43
Average-------	315	(223)	72	341	81	262	25	150	164	---	167	269	614	290	95	257	82	189	91	192
Jan. 22-----	355	267	106	433	58	367	23	---	79	---	115	65	617	391	122	370	128	322	---	181
Jan. 23-----	320	240	130	438	18	356	26	---	202	218	176	273	667	366	160	360	107	278	---	124
Jan. 24-----	378	257	152	287	30	205	39	218	246	---	230	56	646	376	261	287	121	302	---	53
Jan. 25-----	351	269	144	309	38	380	22	194	69	---	55	111	617	382	150	357	170	267	---	123
Jan. 26-----	326	42	55	388	---	358	18	174	235	---	230	300	603	390	125	363	223	44	---	227
Jan. 27-----	306	115	63	299	---	90	49	214	182	---	143	185	606	238	205	153	65	49	---	105
Jan. 28-----	380	70	16	290	---	88	49	211	26	---	12	280	650	335	202	144	62	20	---	220
Average-------	345	180	95	349	36	263	32	202	148	---	137	181	629	354	175	291	125	183	---	148
Jan. 29-----	401	169	44	83	57	120	51	197	216	---	222	456	634	265	93	31	59	70	---	206
Jan. 30-----	382	253	2	120	155	9	---	218	235	---	229	462	641	65	271	42	170	190	---	303
Jan. 31-----	338	217	44	191	46	112	---	100	67	---	50	412	606	62	269	40	229	262	---	167
Feb. 1-----	385	60	28	424	32	303	---	129	216	---	154	240	641	130	131	288	37	168	---	70
Feb. 2-----	113	55	30	426	161	293	---	53	101	---	125	185	625	372	171	382	148	141	---	333
Feb. 3-----	382	250	105	337	81	127	78	88	191	---	176	439	651	356	240	156	236	187	---	57
Feb. 4-----	417	116	44	137	62	21	80	242	291	---	286	429	683	412	284	110	236	43	---	142
Average-------	345	160	43	245	85	141	---	147	188	---	177	375	640	238	208	150	159	151	---	183

1960	Dodge City, Kans.	El Paso, Tex.	Ely, Nev.	Flaming Gorge, Utah	Ft. Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hartford, Conn.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Lander, Wyo.	Laramie, Wyo.
Jan. 1-----	253	315	244	128	50	193	---	41	198	119	114	72	269	225	357	194	---	134	107
Jan. 2-----	297	361	306	235	178	(209)	---	175	261	143	61	31	240	13	355	76	42	231	182
Jan. 3-----	304	152	283	(185)	240	242	---	182	207	178	299	352	72	50	350	24	194	256	122
Jan. 4-----	216	136	228	(211)	88	242	309	---	270	88	126	349	148	168	352	92	82	270	186
Jan. 5-----	215	311	286	144	35	(232)	312	103	260	141	---	82	120	156	353	123	25	286	220
Jan. 6-----	334	361	202	86	106	211	160	140	245	95	---	39	196	219	348	140	59	233	150
Jan. 7-----	287	358	194	(145)	383	214	192	162	206	153	79	223	181	211	349	83	342	245	71
Average-------	272	285	249	(162)	154	(220)	243	134	235	131	136	164	175	149	352	104	124	236	148
Jan. 8-----	296	356	185	151	368	156	372	83	291	43	295	383	168	247	300	140	347	159	198
Jan. 9-----	297	355	97	(266)	146	80	371	97	202	127	297	347	275	161	98	166	208	220	202
Jan. 10-----	243	191	188	---	353	159	339	226	140	163	267	321	32	23	95	10	104	226	143
Jan. 11-----	89	93	300	191	97	107	374	139	49	123	163	323	285	74	338	116	---	241	129
Jan. 12-----	239	371	180	175	275	190	367	147	50	61	76	130	251	95	378	123	173	197	157
Jan. 13-----	88	319	231	106	78	256	343	106	146	179	241	111	61	53	377	15	131	118	151
Jan. 14-----	187	278	237	152	388	154	249	185	88	178	116	160	258	17	118	136	107	198	94
Average-------	205	281	203	(174)	244	157	345	141	138	125	208	254	190	96	244	101	179	194	154
Jan. 15-----	329	(370)	309	90	402	98	120	195	134	93	232	410	24	30	235	55	358	181	204
Jan. 16-----	51	152	342	297	79	208	414	230	196	157	321	377	271	275	387	107	175	201	142
Jan. 17-----	195	---	191	169	297	255	392	115	214	120	79	43	241	61	400	55	142	178	157
Jan. 18-----	245	381	182	332	419	205	102	199	276	217	47	361	90	36	334	57	399	300	284
Jan. 19-----	(349)	390	223	226	291	257	428	163	231	203	315	385	180	114	379	53	189	314	302
Jan. 20-----	362	403	331	338	(424)	200	288	109	292	192	340	455	207	155	347	98	361	312	291
Jan. 21-----	338	(401)	173	211	413	50	443	214	252	122	350	474	162	181	166	111	403	238	201
Average-------	(267)	(349)	250	237	(332)	182	312	175	228	158	241	358	168	122	321	77	290	246	226
Jan. 22-----	311	394	294	(256)	412	218	443	221	184	97	308	467	160	263	246	38	385	230	220
Jan. 23-----	310	399	323	248	79	227	423	220	313	114	340	397	180	276	326	105	113	289	260
Jan. 24-----	281	371	214	285	403	134	387	185	312	50	248	191	302	290	392	193	150	277	243
Jan. 25-----	332	370	120	144	84	131	392	131	148	78	325	486	284	216	245	253	381	166	112
Jan. 26-----	218	409	287	216	102	227	423	219	300	95	341	480	292	211	345	198	124	125	244
Jan. 27-----	186	388	291	157	431	273	295	209	148	192	55	124	150	---	410	85	291	---	204
Jan. 28-----	328	340	356	352	330	248	332	---	318	179	19	220	31	58	397	37	---	333	291
Average-------	281	381	269	(237)	263	208	385	197	246	115	234	338	200	219	337	130	240	236	225
Jan. 29-----	382	427	321	(345)	458	256	68	138	318	106	41	38	150	60	370	20	94	310	261
Jan. 30-----	398	385	309	245	463	280	135	142	244	82	29	40	250	192	422	288	423	249	245
Jan. 31-----	78	---	303	235	240	246	80	278	342	214	39	165	125	185	402	293	391	150	140
Feb. 1-----	147	411	184	262	408	33	312	---	219	217	349	457	230	39	161	105	182	295	187
Feb. 2-----	109	212	246	126	86	310	433	80	76	87	339	493	141	196	447	132	105	203	130
Feb. 3-----	29	436	257	360	201	78	118	218	278	229	239	160	293	221	152	208	64	357	201
Feb. 4-----	59	434	366	377	86	243	280	208	384	212	275	55	345	50	452	329	412	368	315
Average-------	172	384	284	(279)	277	207	204	177	266	164	187	201	219	135	344	197	239	276	211

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Las Vegas, Nev.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.	Matanuska, Alaska	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Page, Ariz.	Portland, Me.	Pullman, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	Salt Lake City, Utah	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Seattle-Tacoma, Wash	Shreveport, La.	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Tucson, Ariz.	Washington, D. C. (Obs & Test Dev Ctr)
Jan. 1-----	303	127	73	298	331	---	10	8	---	209	369	342	87	228	229	48	117	49	346	209	66	(95)	350	56	96	61	282	171	236	170	91	172	246	49	121	91	249
Jan. 2-----	309	40	43	221	291	---	126	3	---	67	391	359	27	231	142	107	54	224	325	217	108	(188)	308	111	94	190	288	19	211	68	45	76	84	209	247	367	71
Jan. 3-----	307	55	295	163	197	---	237	4	517	122	334	178	156	58	114	230	270	307	332	22	53	(187)	235	210	131	229	263	117	99	150	258	113	76	247	119	272	219
Jan. 4-----	314	125	71	258	295	---	220	6	422	147	326	126	113	168	166	257	78	68	330	175	104	(118)	349	145	191	106	281	169	182	39	115	117	145	102	355	362	165
Jan. 5-----	309	92	31	249	296	---	159	23	571	134	346	162	30	123	83	266	37	97	331	159	106	(214)	336	212	186	65	281	146	99	29	39	73	208	50	320	363	70
Jan. 6-----	300	153	100	235	275	---	239	11	569	45	347	362	49	151	148	254	49	318	318	170	126	(137)	336	91	97	217	272	147	144	34	30	90	174	---	307	358	66
Jan. 7-----	264	277	110	234	265	---	239	18	492	16	328	361	92	92	79	194	161	183	274	212	75	(190)	303	201	102	345	279	42	67	46	278	59	143	---	175	352	38
Average-------	301	124	103	237	279	---	176	11	514	106	349	270	79	150	137	194	110	178	322	166	91	(161)	317	147	128	173	278	116	148	77	122	100	154	131	235	309	125
Jan. 8-----	308	201	328	240	266	---	237	4	549	156	220	353	240	164	200	243	282	233	326	162	86	(174)	324	188	149	316	131	98	193	28	288	59	153	---	350	354	224
Jan. 9-----	176	344	212	81	64	---	142	7	568	122	287	292	306	251	244	138	264	293	245	226	238	(184)	165	95	103	49	111	77	242	145	148	89	229	---	381	350	261
Jan. 10-----	228	134	77	102	60	---	50	---	417	71	320	270	121	34	35	74	68	304	168	134	86	(199)	55	175	232	88	137	81	17	38	132	55	88	---	354	50	166
Jan. 11-----	280	136	83	270	249	---	90	---	514	51	386	74	208	253	236	44	185	50	200	234	102	(112)	232	80	219	124	130	94	221	63	249	81	220	52	349	42	140
Jan. 12-----	121	138	76	306	332	---	91	32	515	163	385	365	123	236	171	47	70	306	108	233	62	(180)	257	64	107	106	261	30	200	75	117	73	31	265	393	362	53
Jan. 13-----	334	189	326	306	315	---	29	54	516	110	368	104	275	48	29	55	217	186	142	154	231	(176)	368	58	159	56	306	73	30	79	60	173	32	150	379	159	119
Jan. 14-----	217	38	177	58	74	---	37	57	411	98	392	376	82	242	149	25	21	308	333	384	116	128	139	181	175	355	205	35	217	91	188	114	54	229	357	---	83
Average-------	238	169	183	195	194	---	97	31	499	110	337	262	194	175	152	90	158	240	218	218	132	(165)	220	120	164	157	183	70	160	74	169	92	115	174	366	220	149
Jan. 15-----	93	68	287	209	217	---	228	57	339	109	382	382	40	43	5	232	162	332	260	100	95	216	208	221	222	364	235	155	20	53	310	92	98	257	379	338	33
Jan. 16-----	341	280	62	319	336	---	46	6	589	80	232	73	104	254	225	277	238	88	352	239	65	80	375	232	270	35	309	85	245	39	167	114	108	55	410	90	272
Jan. 17-----	340	47	45	263	262	---	62	12	606	66	392	235	241	260	212	87	27	107	364	236	318	192	335	207	264	302	307	110	233	186	119	207	128	---	379	---	230
Jan. 18-----	247	133	204	206	267	---	246	21	599	83	247	401	67	123	25	213	176	296	199	240	267	172	326	191	291	408	231	84	46	191	310	203	7	271	303	375	22
Jan. 19-----	337	104	343	294	328	---	290	13	---	125	416	337	78	155	65	305	190	322	297	68	259	252	367	226	178	37	283	125	106	47	257	200	153	306	351	391	157
Jan. 20-----	313	187	360	303	335	---	298	28	599	43	430	---	185	266	170	308	165	390	382	156	117	240	370	210	180	337	246	151	256	135	392	92	143	331	382	394	237
Jan. 21-----	174	206	369	190	234	---	249	40	609	180	389	---	342	85	102	295	319	342	272	157	142	222	---	170	141	404	103	161	115	64	374	107	177	298	442	382	256
Average-------	263	146	239	255	283	---	203	25	557	98	355	286	151	170	115	245	182	268	304	171	180	196	330	208	221	269	245	125	146	102	276	145	116	253	378	328	172
Jan. 22-----	237	187	349	160	170	---	282	41	602	134	471	275	154	137	81	319	269	202	186	108	124	223	---	247	117	157	178	157	123	75	341	98	107	216	445	387	209
Jan. 23-----	304	277	127	299	323	---	195	60	604	106	452	174	302	168	96	273	324	236	374	173	199	228	365	179	229	64	268	141	179	31	71	97	136	---	443	396	158
Jan. 24-----	327	258	235	239	312	---	271	60	617	107	458	292	256	273	235	240	252	374	367	272	168	150	364	215	200	171	162	77	281	35	373	86	213	321	407	396	152
Jan. 25-----	307	343	358	77	79	---	273	72	621	117	422	292	337	54	200	300	295	261	272	91	114	80	254	231	62	57	129	100	252	46	371	---	214	295	319	396	287
Jan. 26-----	258	312	115	265	309	---	12	85	609	185	447	365	293	237	228	78	289	154	253	206	---	143	316	(104)	205	118	230	199	205	74	99	67	237	80	403	386	273
Jan. 27-----	326	37	323	318	335	---	65	83	627	110	439	382	43	185	173	167	44	127	312	110	259	174	302	145	136	400	333	233	202	137	362	195	87	98	388	278	185
Jan. 28-----	353	60	53	304	357	---	73	15	626	71	465	353	63	---	33	191	57	77	369	66	73	245	388	105	282	167	309	111	39	27	225	71	87	52	297	323	106
Average-------	302	211	223	237	269	---	167	60	615	119	451	305	207	176	150	224	218	204	305	146	156	178	332	(175)	176	162	230	145	183	61	263	102	154	177	386	366	196
Jan. 29-----	354	133	130	337	369	---	173	15	629	70	444	416	40	---	183	185	51	383	380	186	113	250	396	192	304	432	257	218	173	44	163	71	66	332	173	418	43
Jan. 30-----	351	100	329	288	338	---	299	33	616	155	357	376	55	212	246	321	147	377	343	263	233	245	372	257	246	428	342	236	210	168	397	188	100	---	211	252	277
Jan. 31-----	364	233	81	233	317	---	113	32	589	(69)	303	175	200	166	134	222	210	115	398	228	253	151	382	158	247	252	271	69	145	164	348	232	116	127	277	408	102
Feb. 1-----	191	229	108	51	55	200	---	127	614	74	246	376	195	288	119	141	230	358	303	146	154	84	136	282	220	165	42	243	137	32	270	180	240	323	149	392	183
Feb. 2-----	397	(299)	104	380	390	214	175	65	623	165	296	236	215	---	182	100	313	284	210	298	103	183	391	171	97	74	361	263	135	107	113	123	256	272	424	372	270
Feb. 3-----	201	229	79	94	111	233	243	27	628	76	349	136	199	221	284	267	70	33	379	150	---	104	143	239	349	371	61	142	308	128	38	151	302	68	271	436	340
Feb. 4-----	394	(48)	89	268	285	175	13	80	622	79	359	80	169	311	286	105	70	36	411	302	---	289	367	257	326	203	233	208	310	105	151	113	304	23	209	446	332
Average-------	322	(181)	131	236	266	206	169	54	617	(98)	336	256	153	240	205	191	156	227	346	225	171	187	312	222	256	275	224	197	202	107	211	151	198	191	245	389	221

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

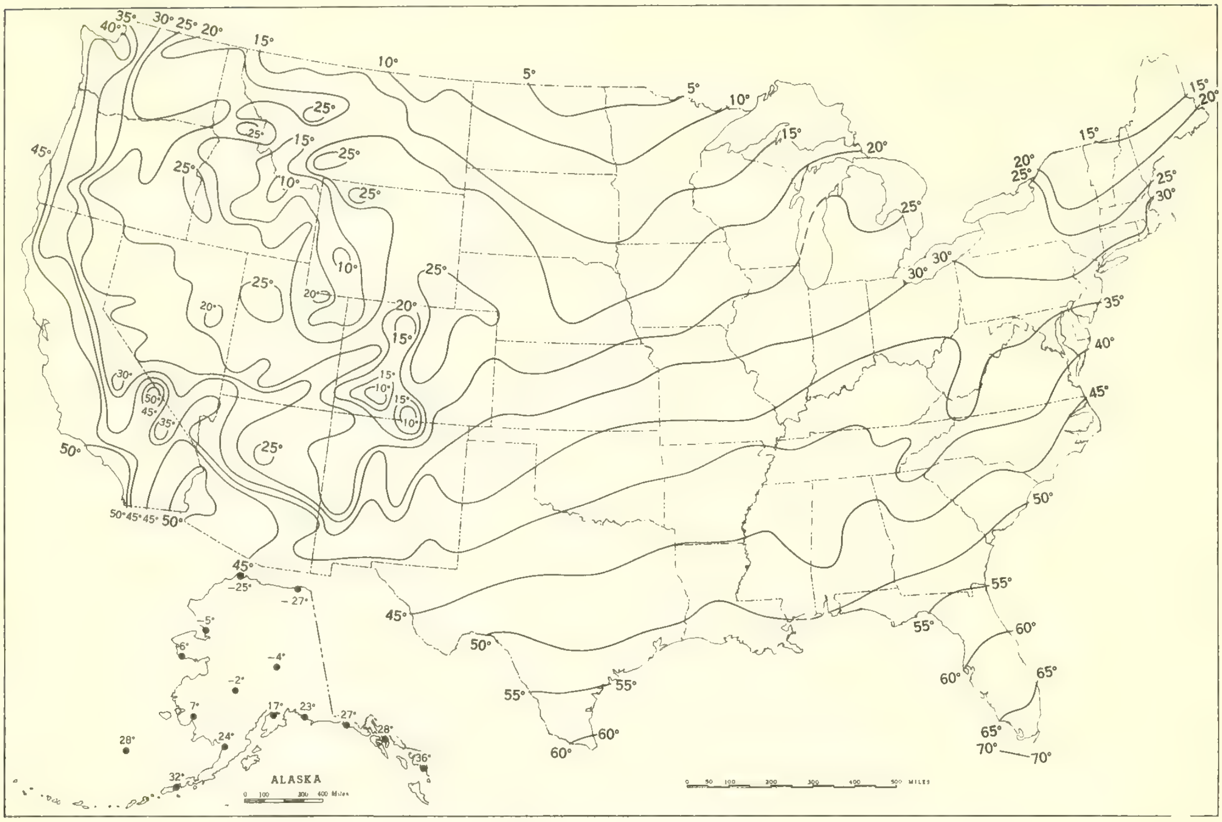
JANUARY 1960

Date	Bismarck, N. Dak.	Caribou, Me.	Ft. Worth, Tex.	Green Bay, Wis.	Washington, D.C. (Silver Hill Obs.)
JAN.					
1	---	.401	---	---	.344
2	---	---	.306	---	---
3	---	---	---	---	---
4	---	---	---	---	---
5	---	.403	---	---	---
6	---	---	---	.337	.306
7	.360	---	.289	---	---
8	---	---	.284	.356	.315
9	---	---	---	---	.326
10	.308	---	.277	---	.343
11	.308	.348	---	---	.356
12	---	.341	.282	---	.343
13	.339	.333	---	---	.319
14	.317	.366	.266	---	.310
15	---	---	.273	.299	---
16	---	---	---	.321	.323
17	---	---	.298	---	.311
18	---	.332	.319	---	---
19	---	---	---	---	.350
20	.350	---	.345	.397	.363
21	---	---	.325	---	.387
22	---	---	.332	---	.438
23	---	---	---	---	.435
24	.419	.385	.357	---	---
25	.433	---	---	---	.448
26	---	---	---	---	.434
27	.405	---	.304	---	.388
28	---	.410	.374	---	.393
29	---	---	.353	---	---
30	.337	.433	.302	.347	.392
31	---	---	---	---	.396

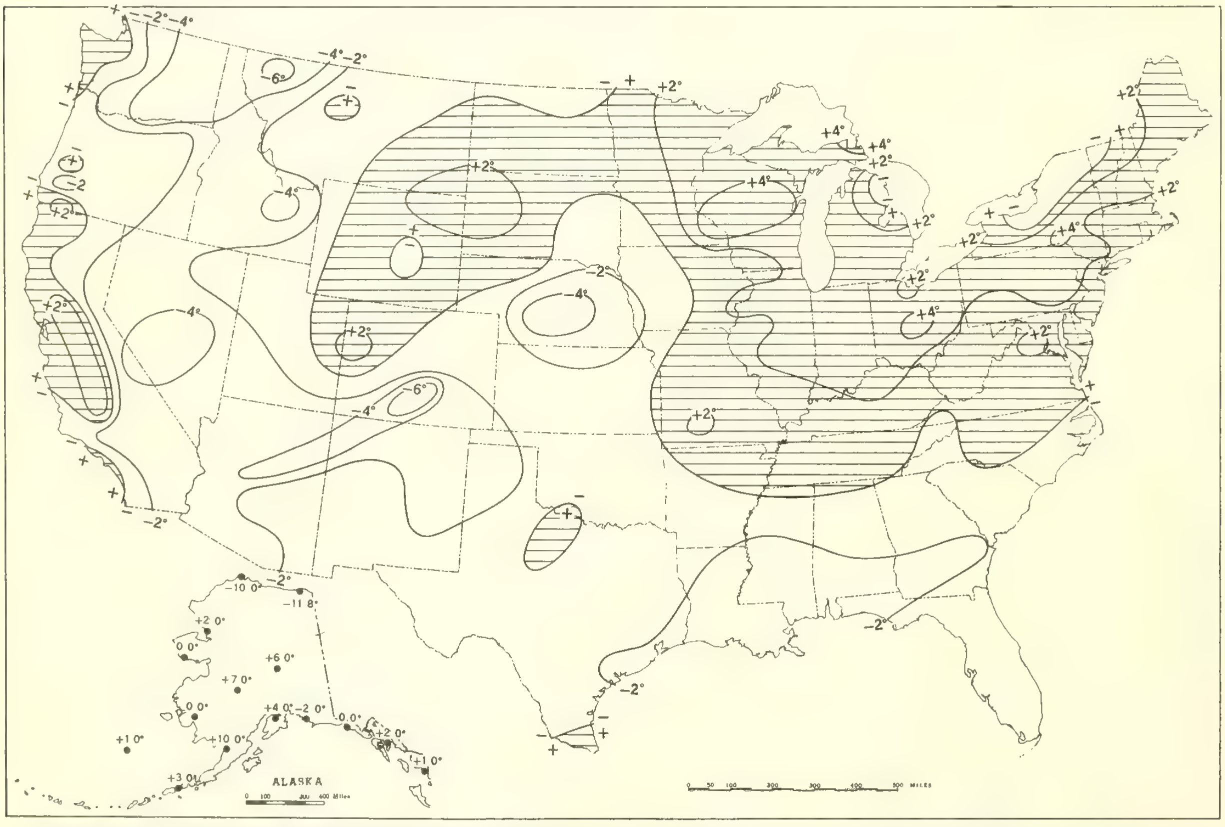
The spectrophotometer measures the total amount of ozone in the atmosphere, i.e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observation can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations; therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational procedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer", Annals of the International Geophysical Year, Volume V, Pergamon Press, 1957.

Chart I. A. Average Temperature (°F.) at Surface, January 1960.



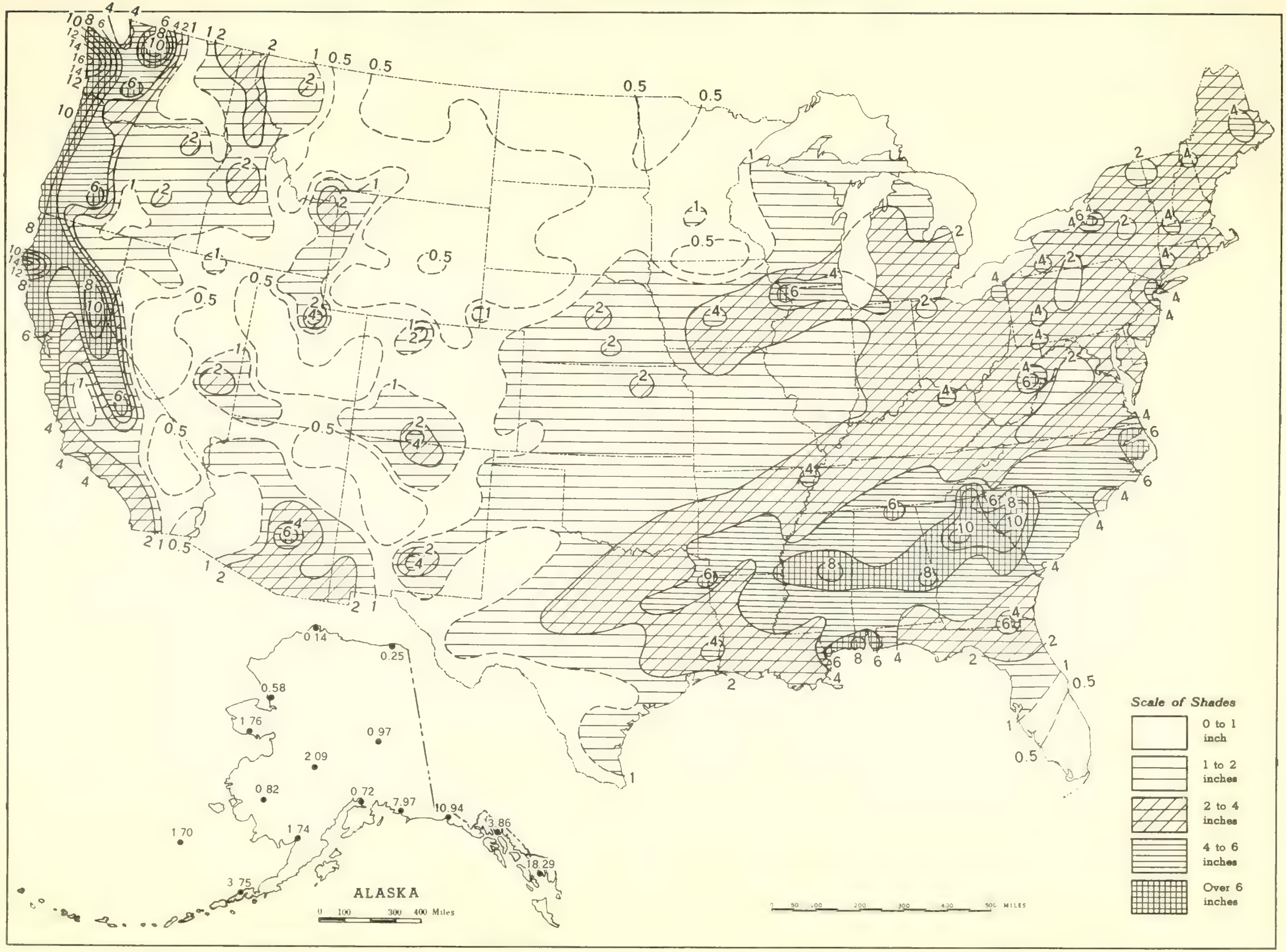
B. Departure of Average Temperature from Normal (°F.), January 1960.



A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

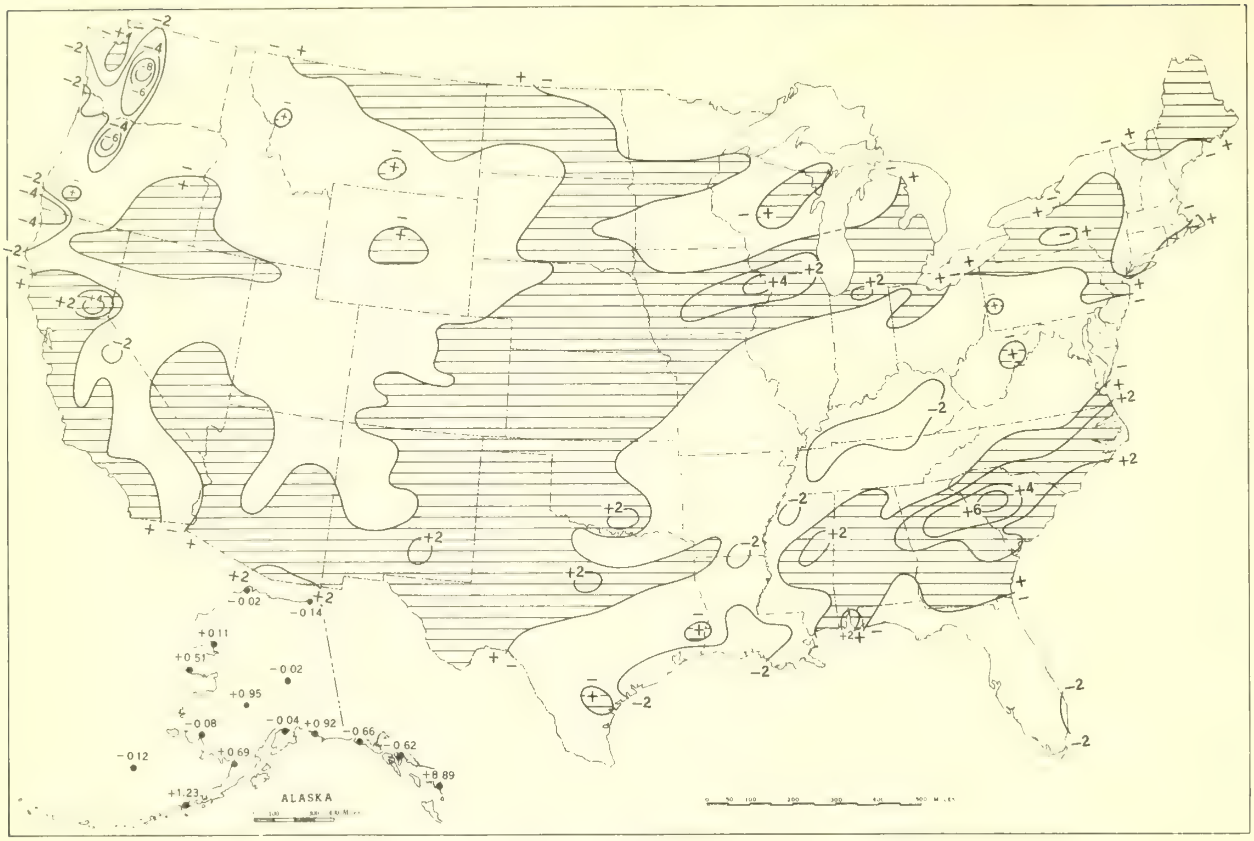
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), January 1960.

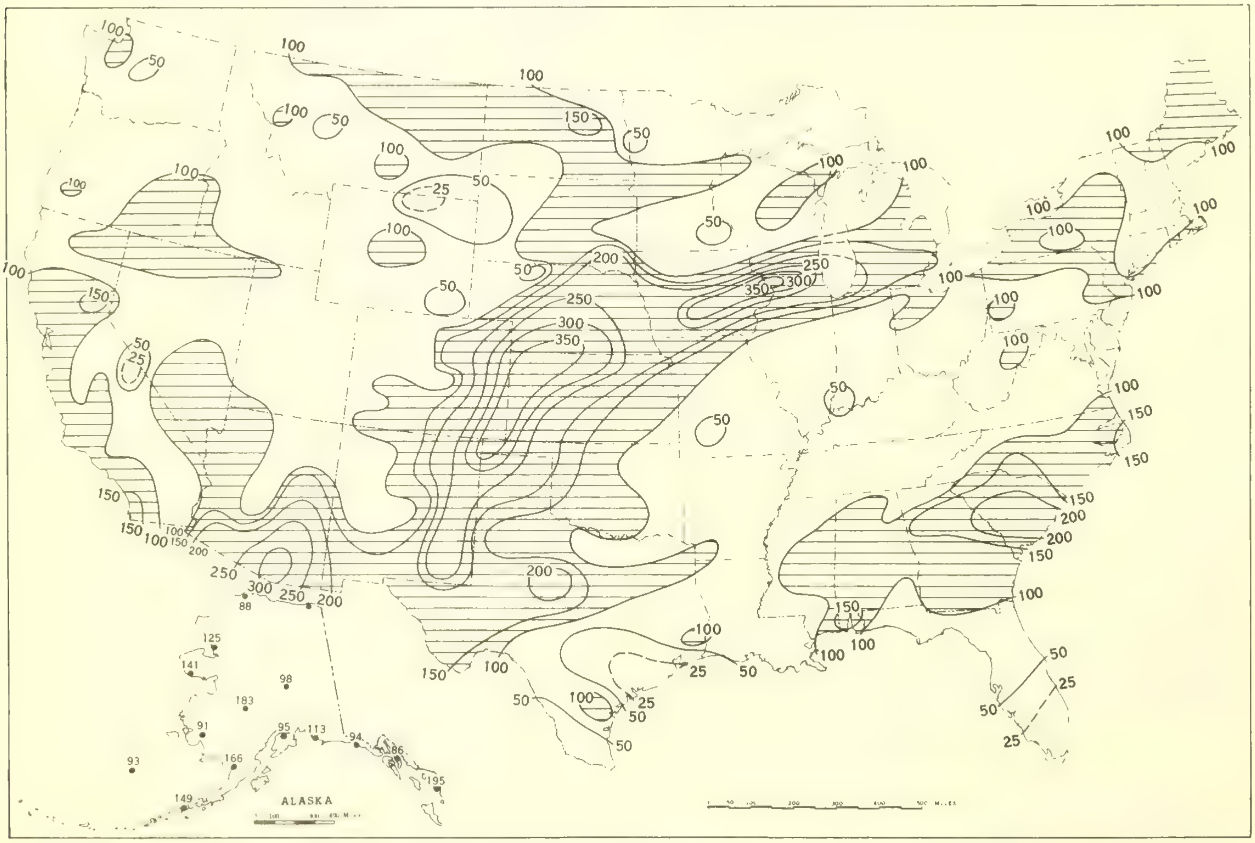


Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), January 1960.

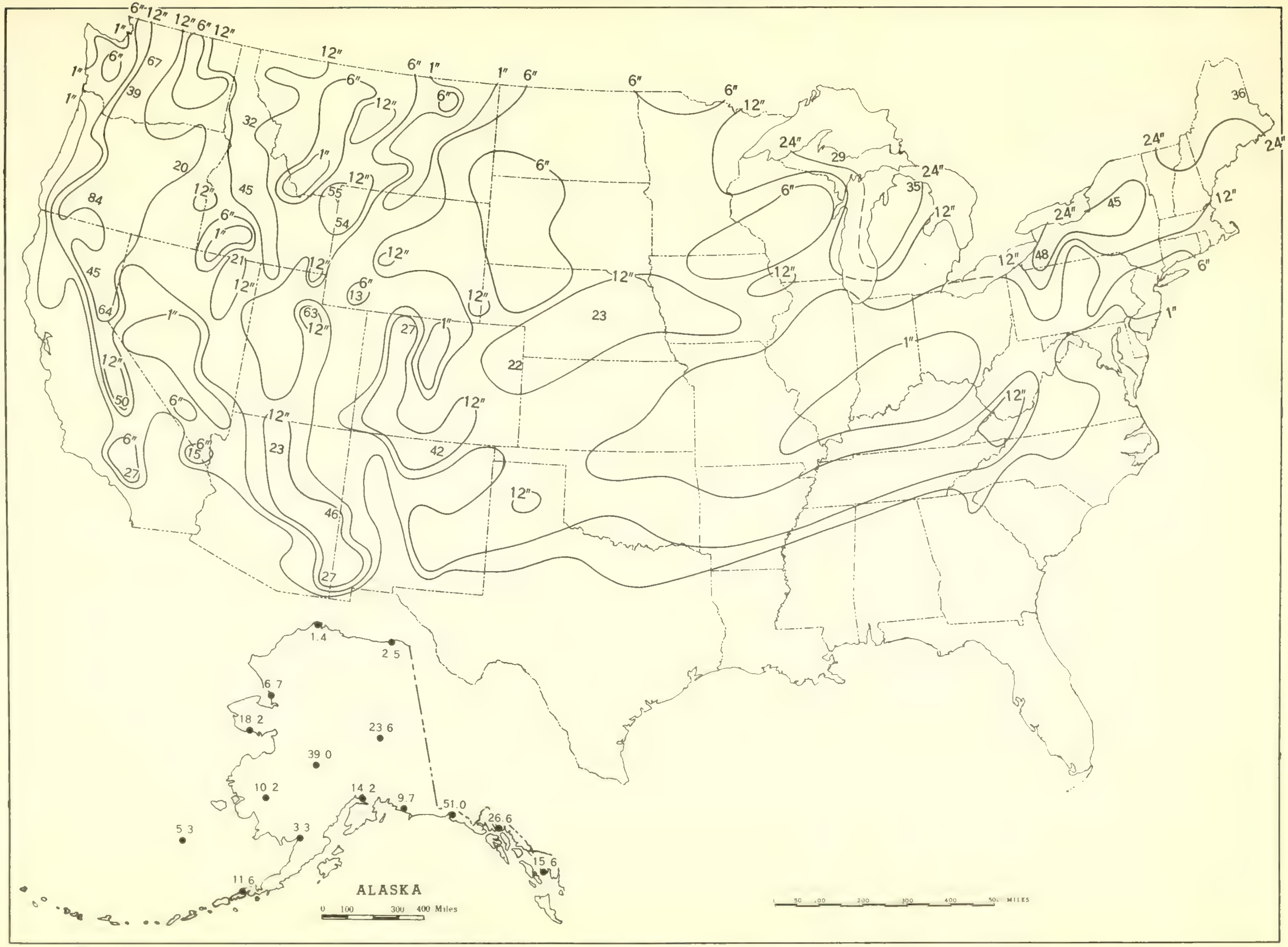


B. Percentage of Normal Precipitation, January 1960.



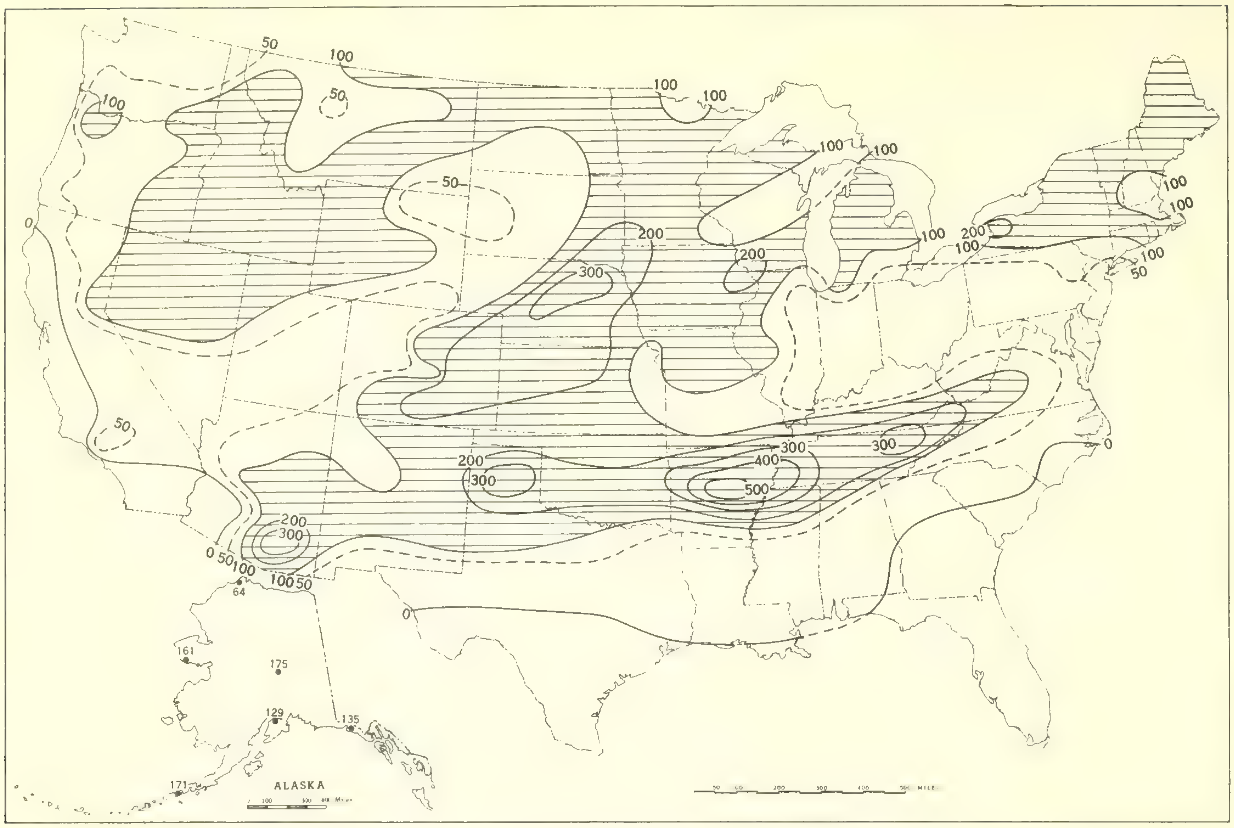
Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart IV. Total Snowfall (Inches), January 1960.

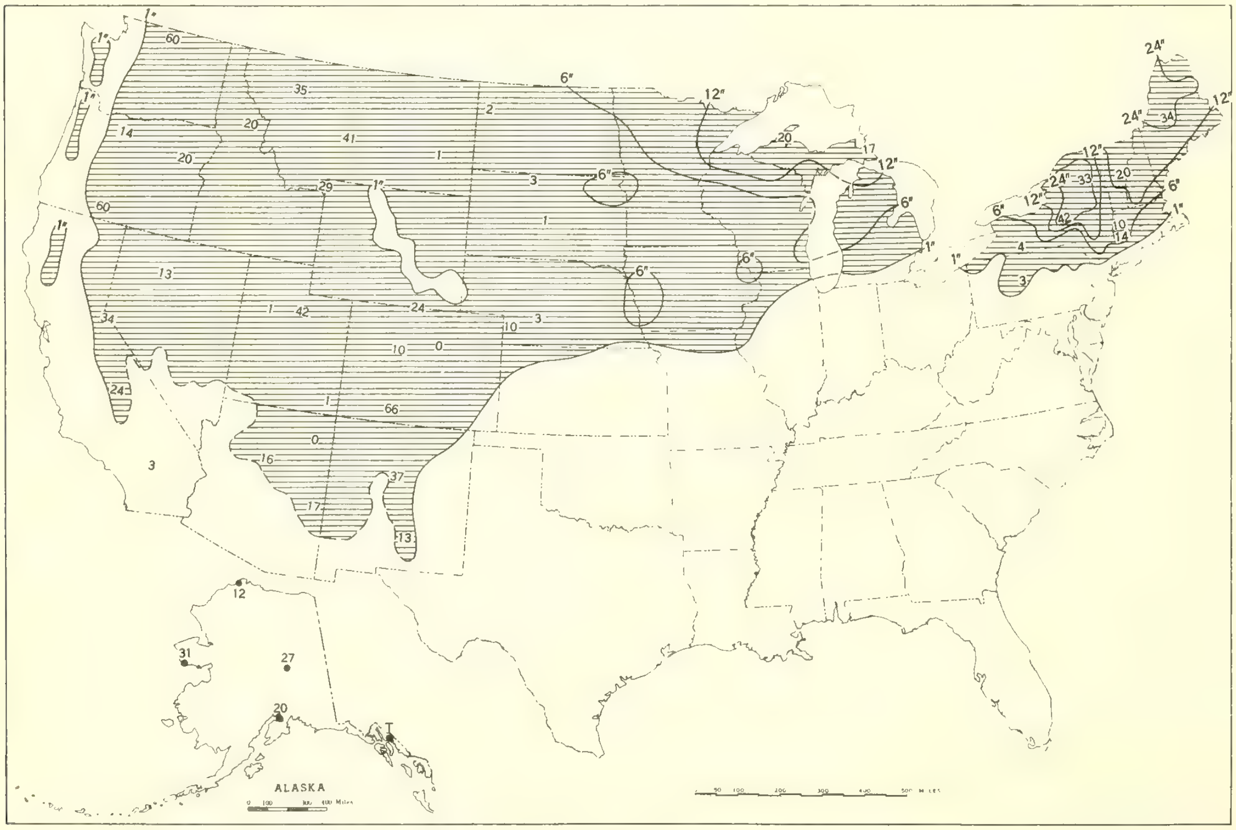


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, January 1960.

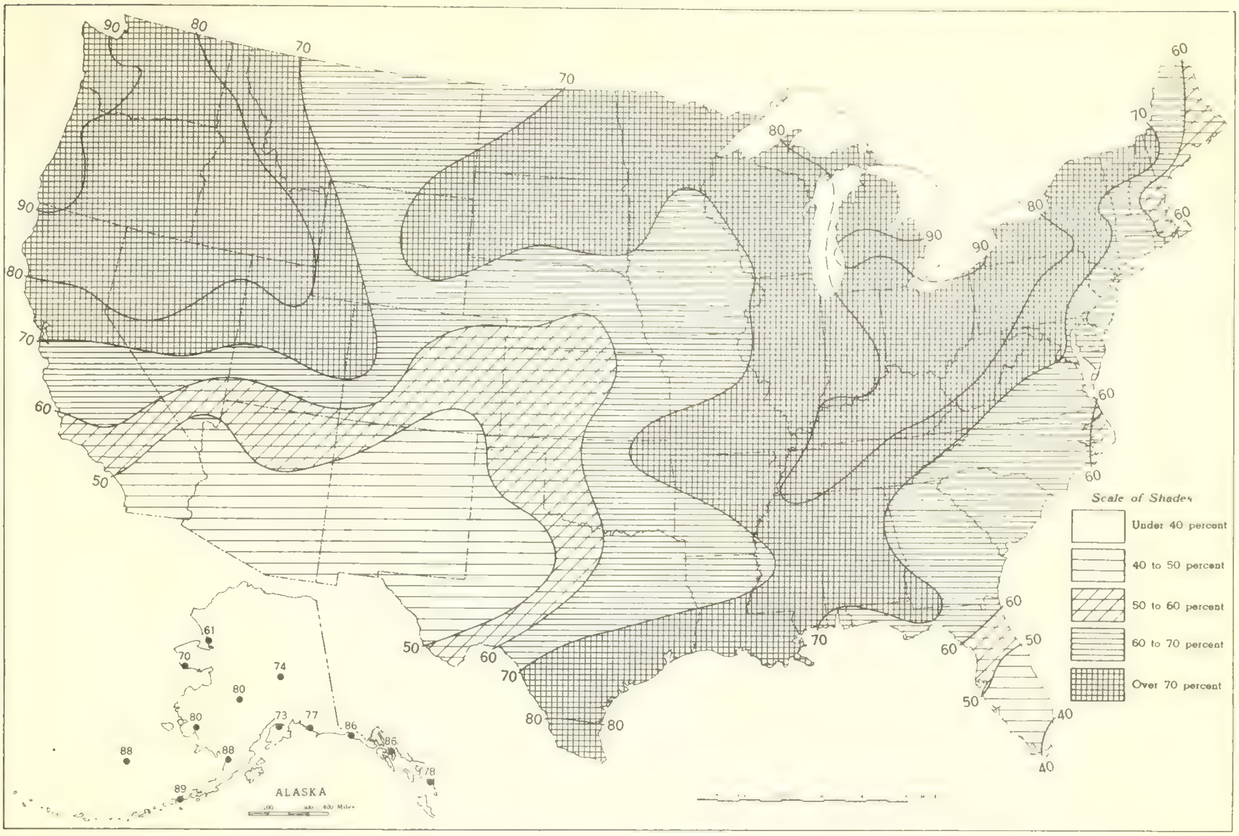


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., February 1, 1960.

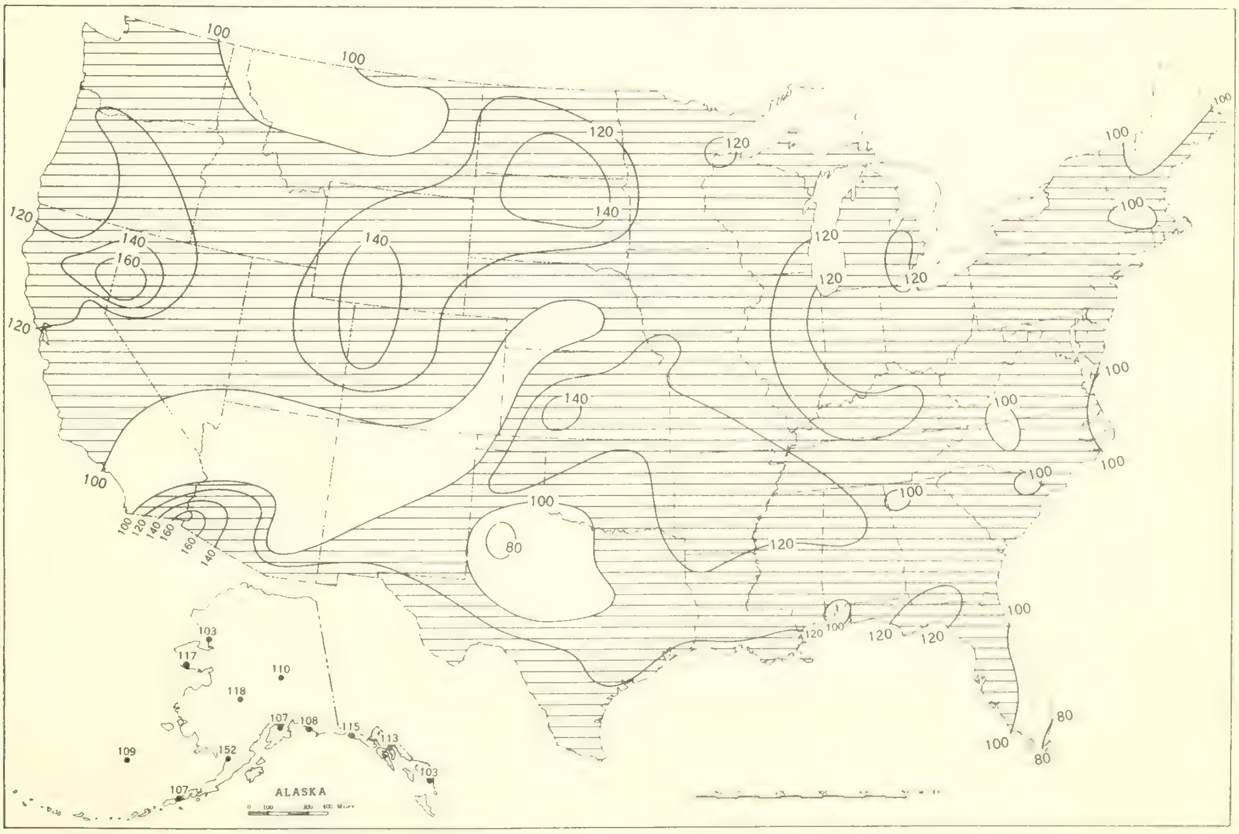


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a. m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, January 1960.

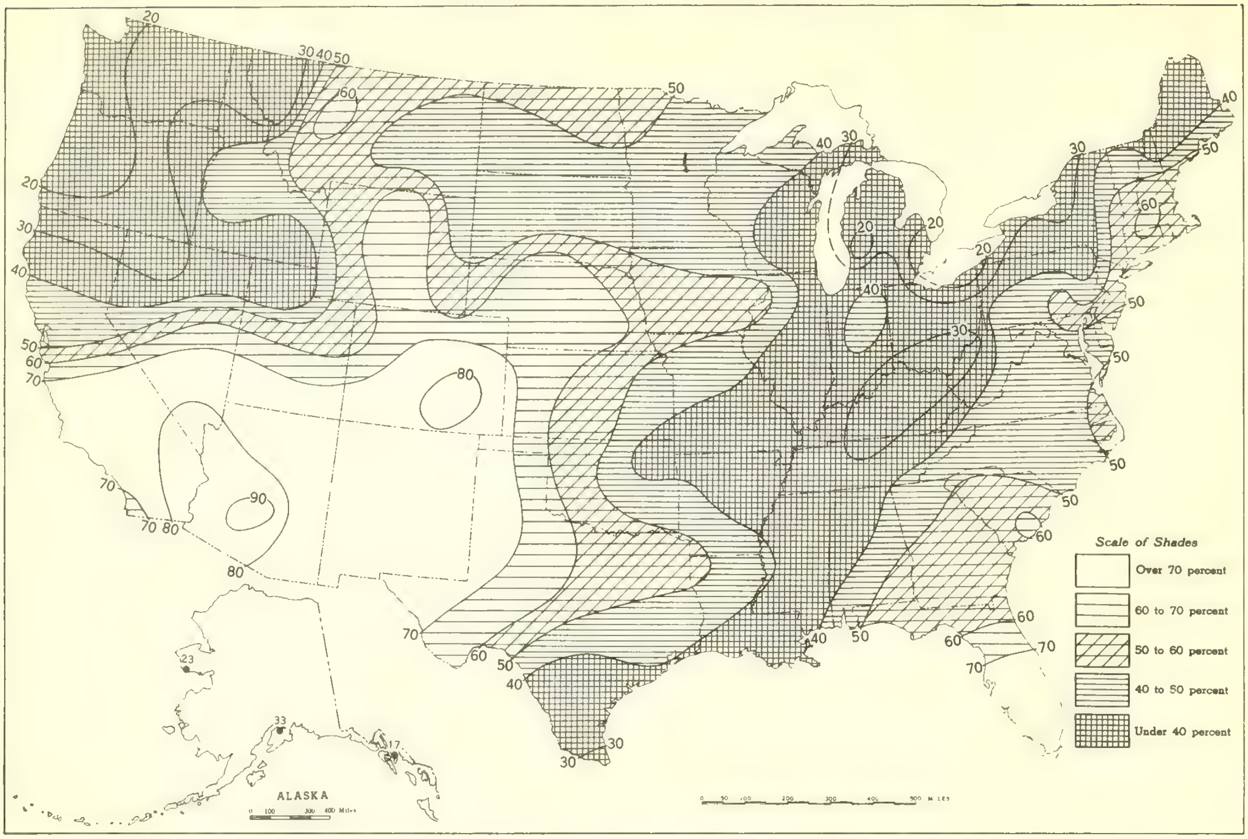


B. Percentage of Mean Monthly Sky Cover Between Sunrise and Sunset, January 1960.

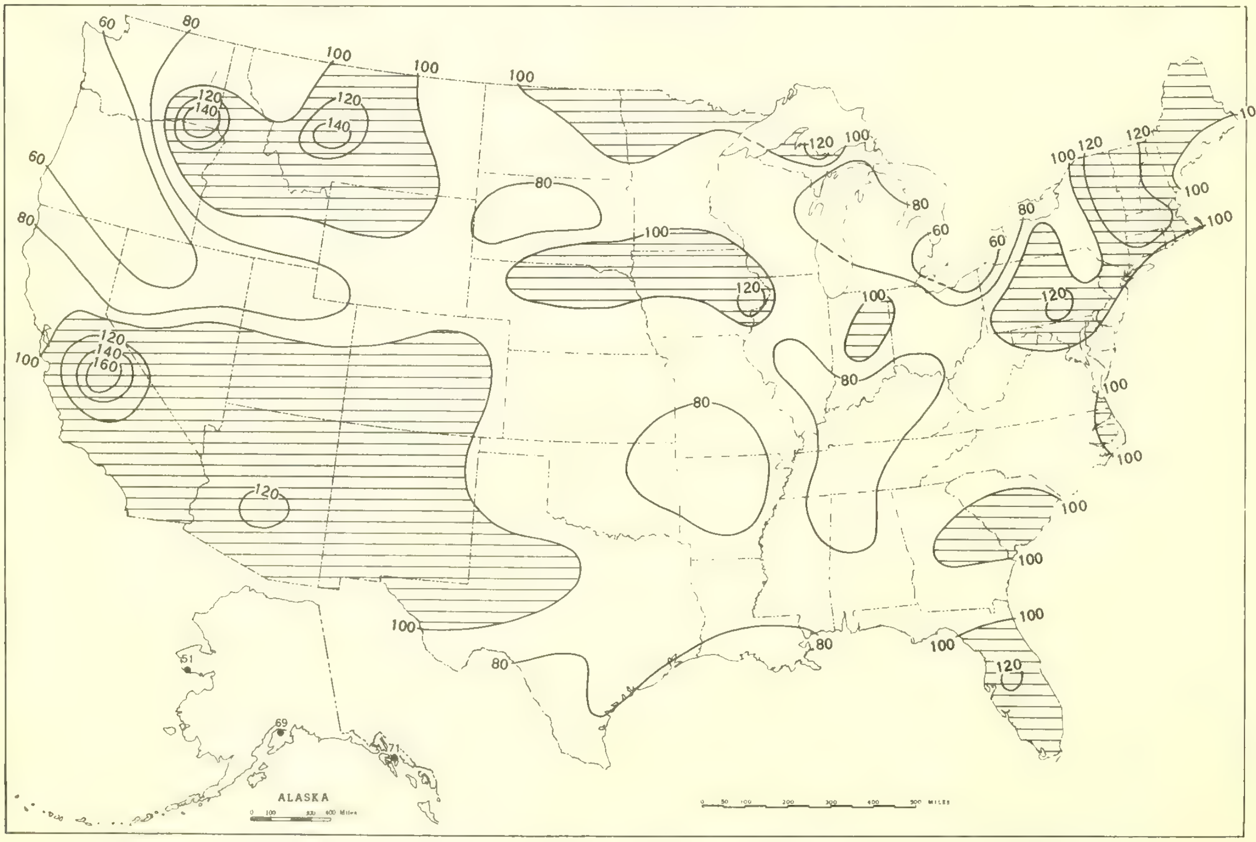


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of mean amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, January 1960.

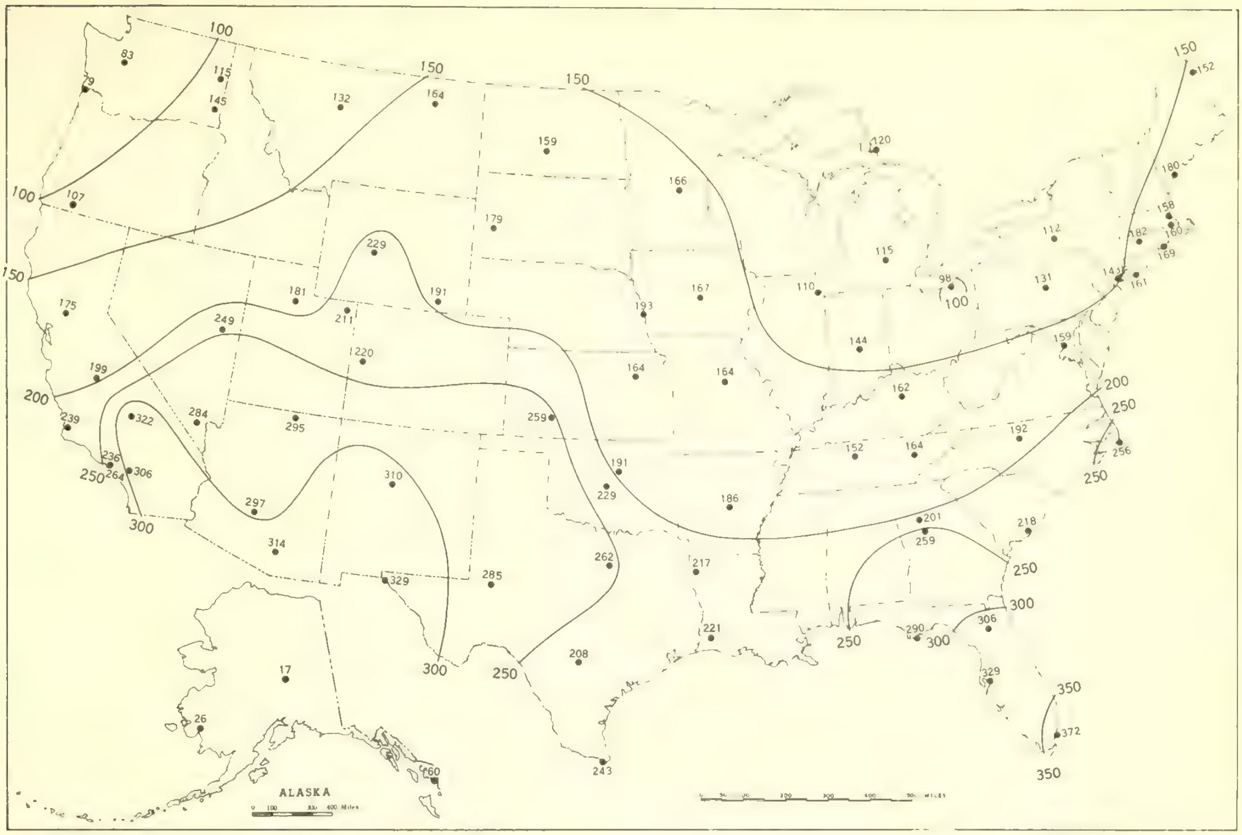


B. Percentage of Mean Monthly Sunshine, January 1960.

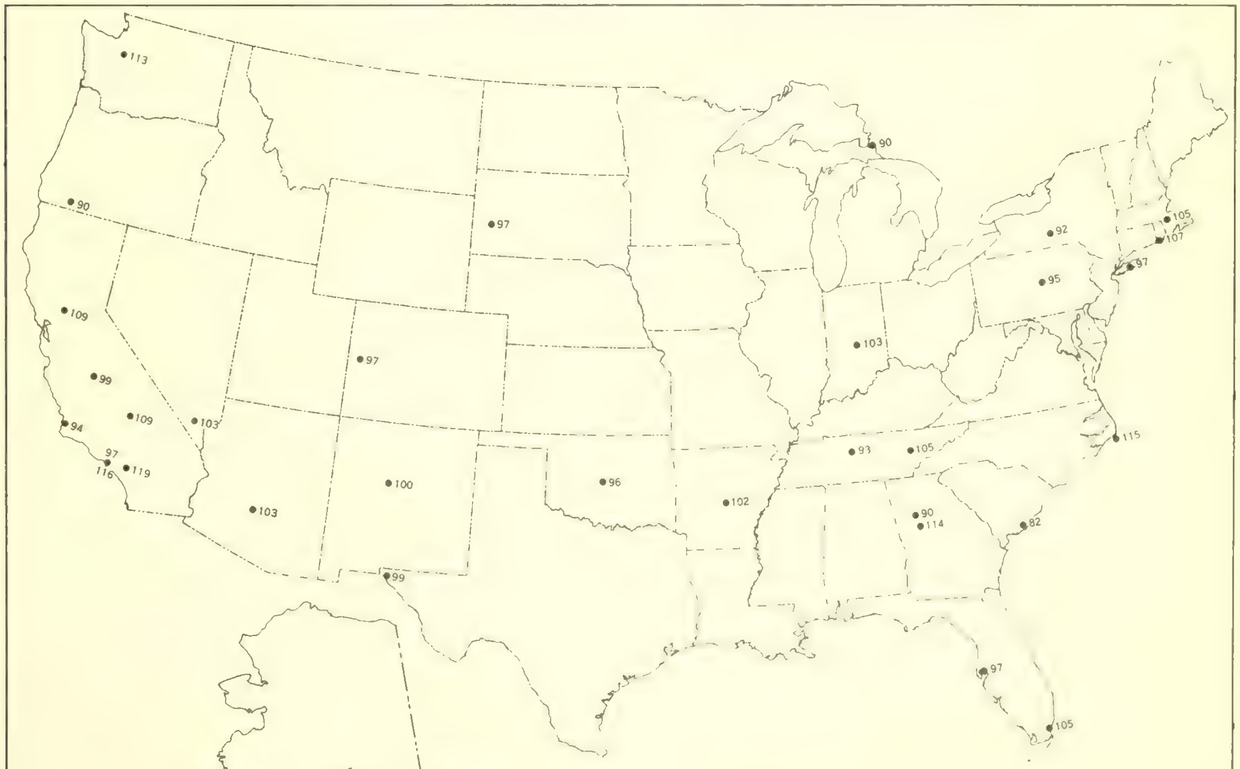


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, January 1960.



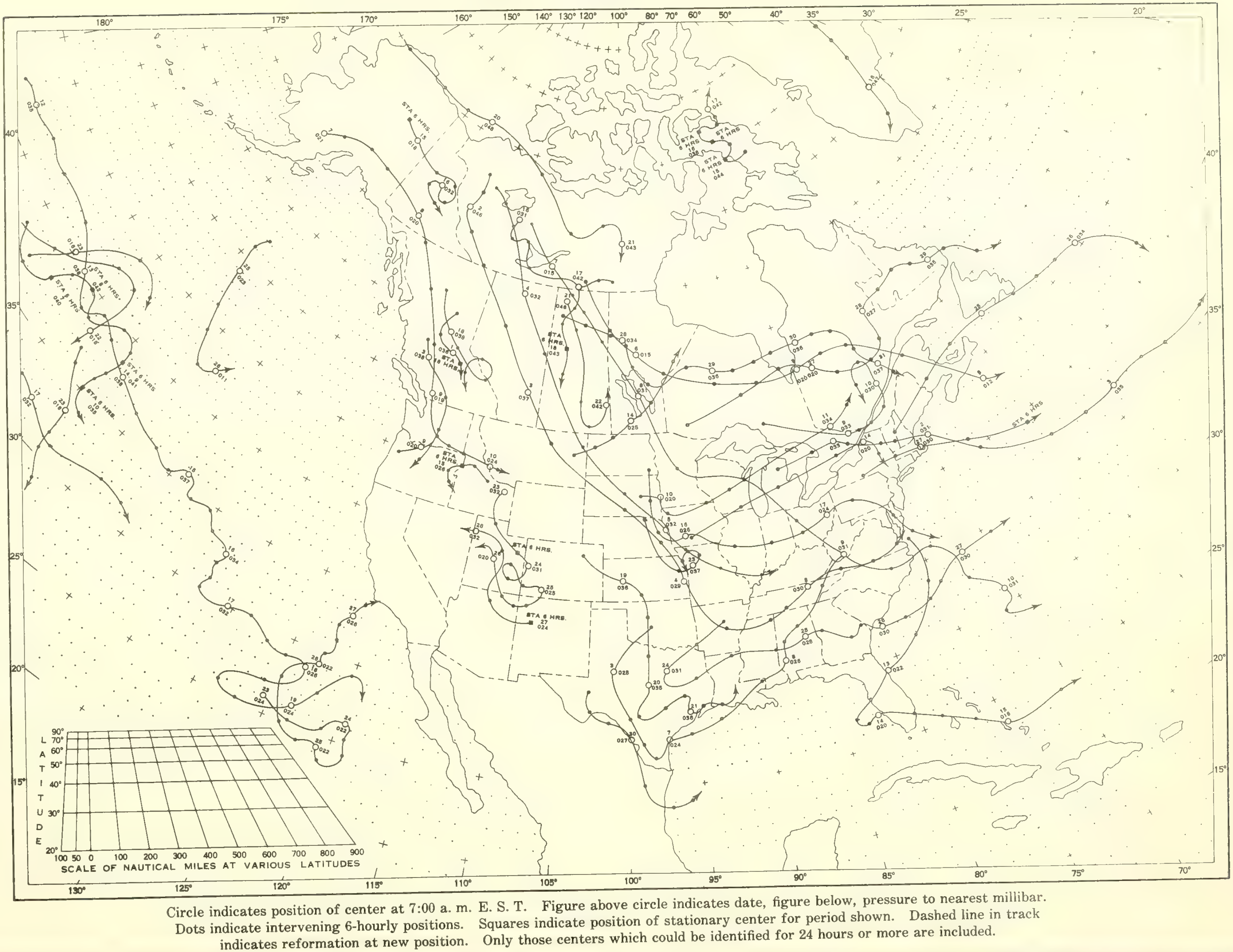
B. Percentage of Mean Daily Solar Radiation, January 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. **and recorded in International Pyrheliometer Scale of 1956.**

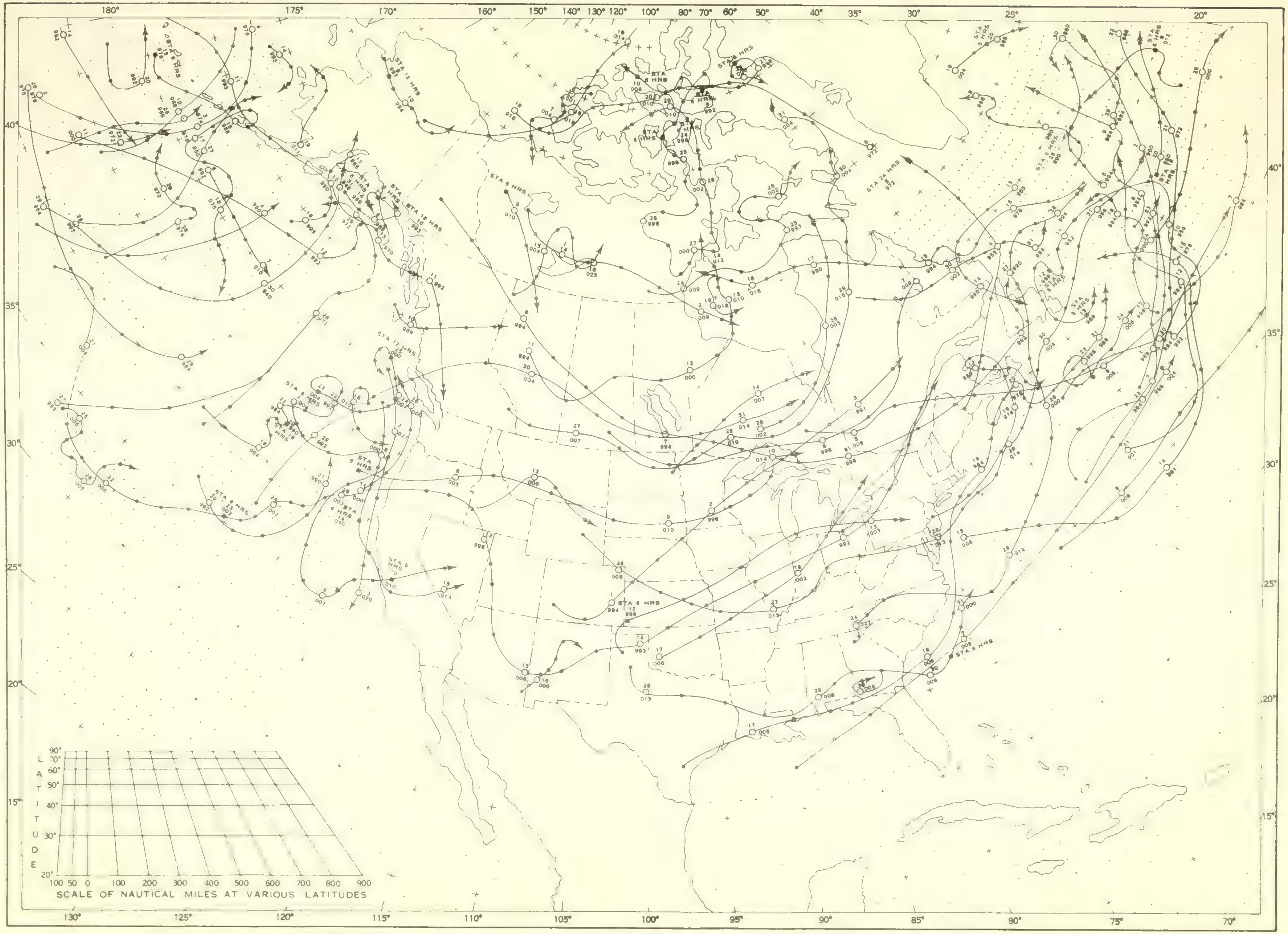
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, January 1960.



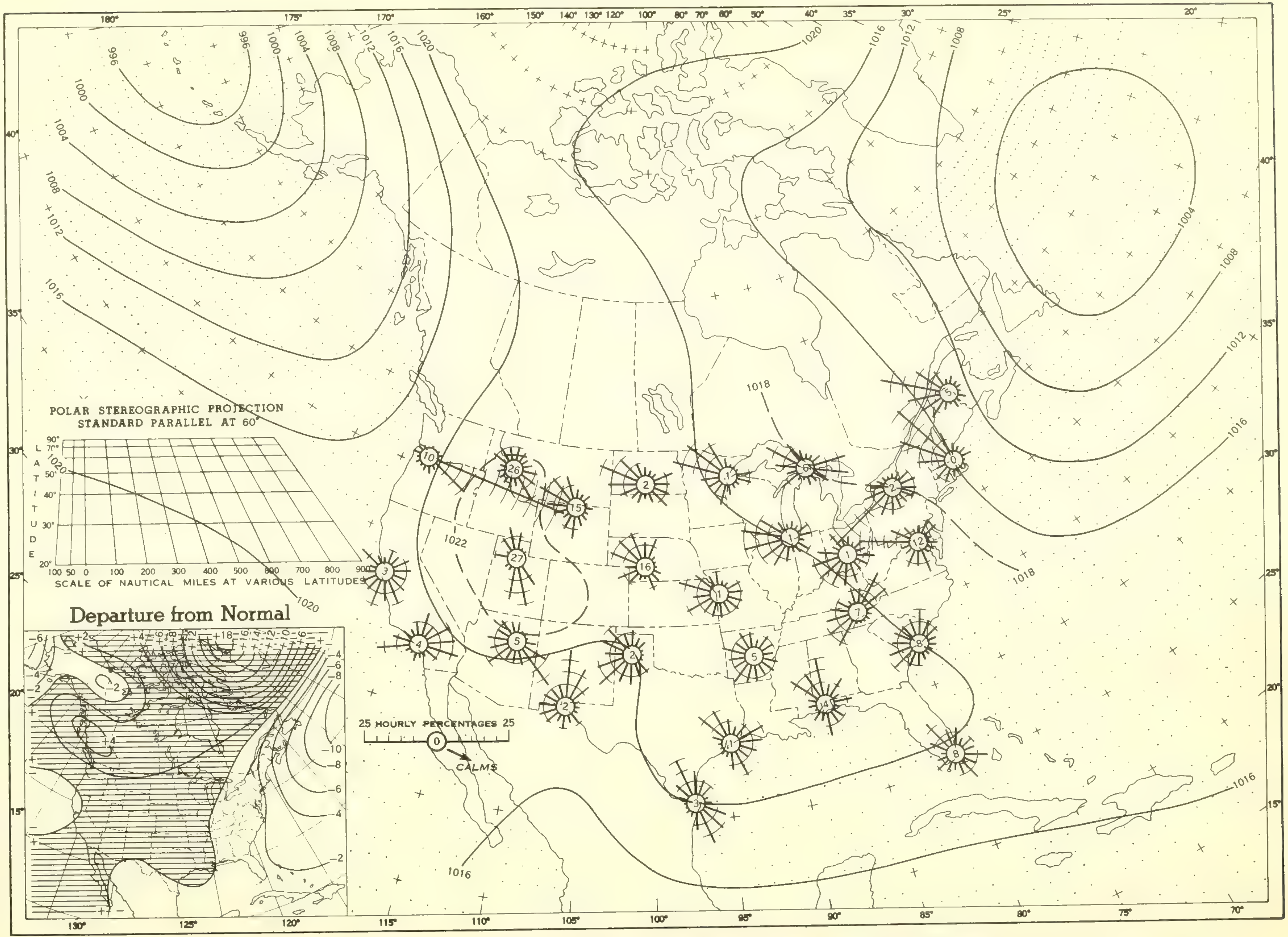
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, January 1960.



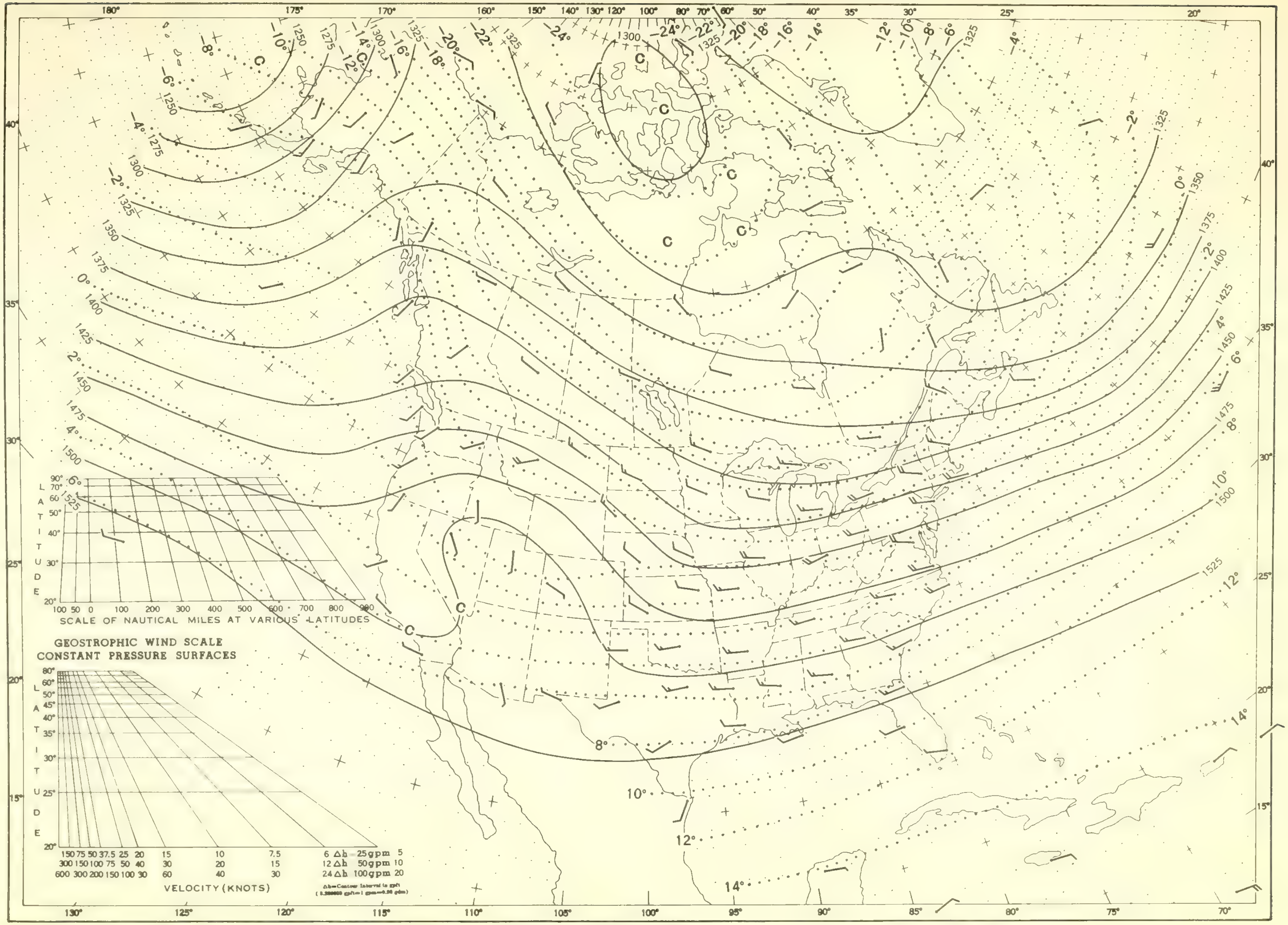
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, January 1960. Inset: Departure of Average Pressure (mb.) from Normal, January 1960.



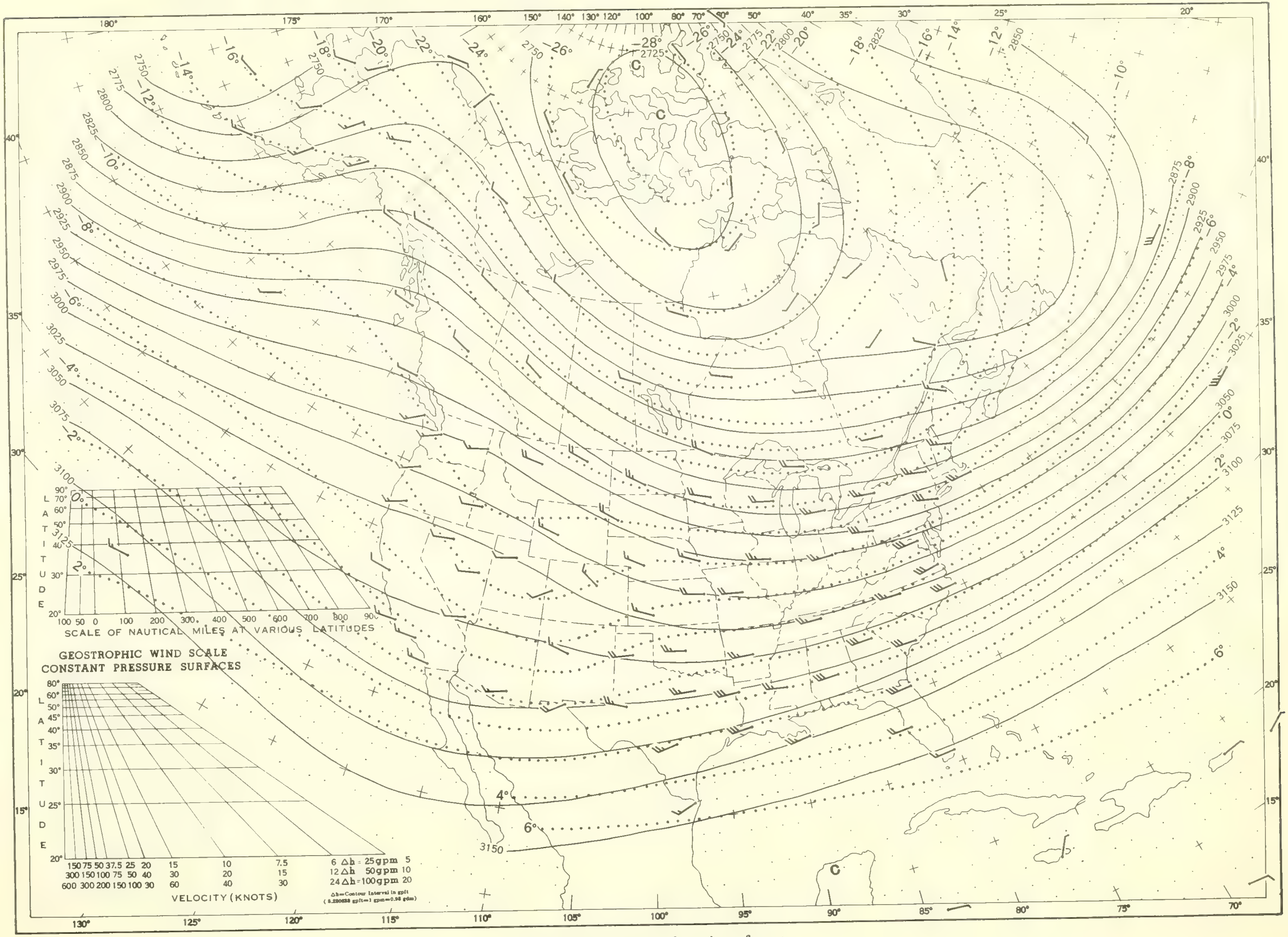
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, January 1960. Average Height and Temperature, and Resultant Winds.



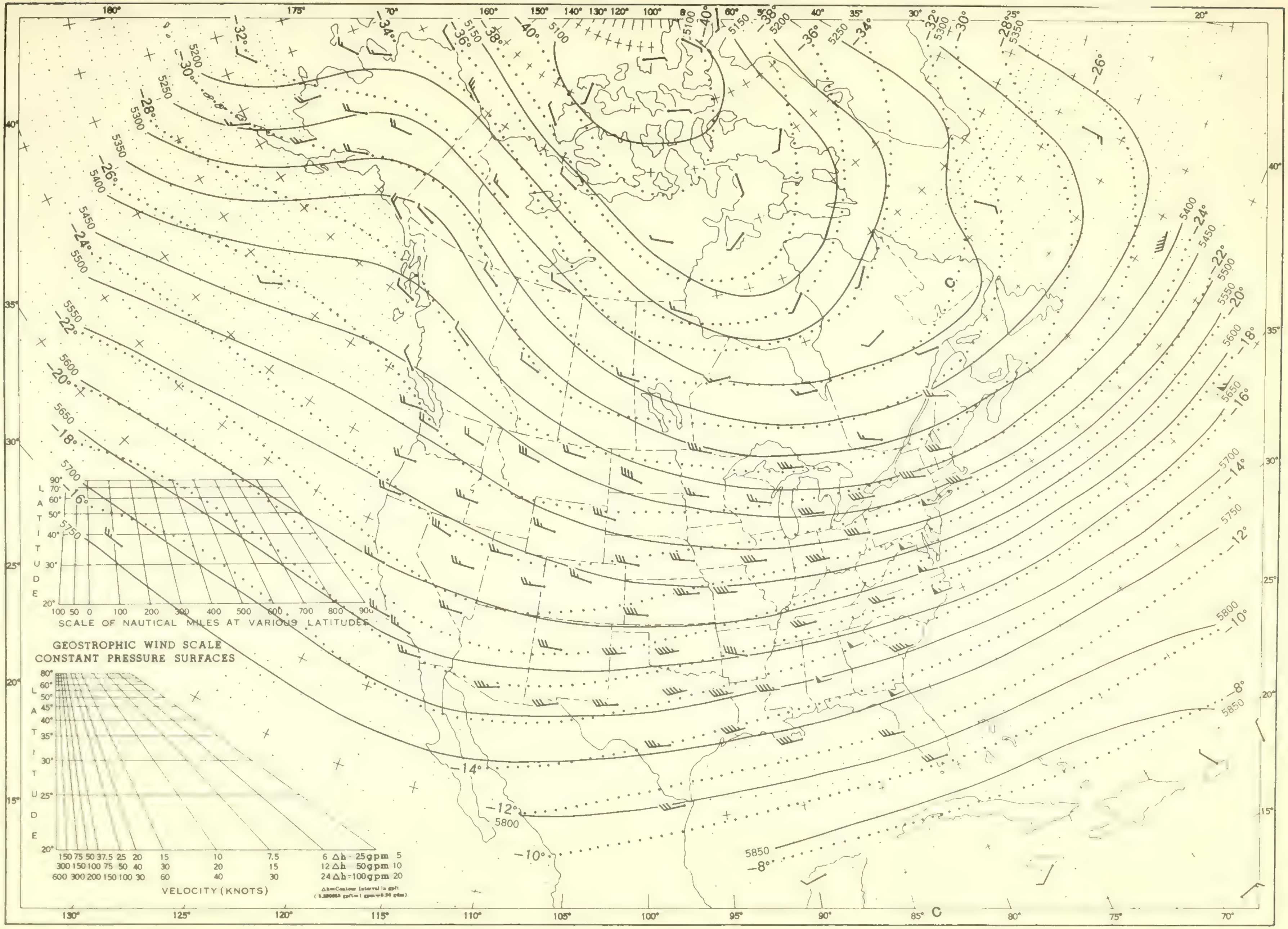
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, January 1960. Average Height and Temperature, and Resultant Winds.



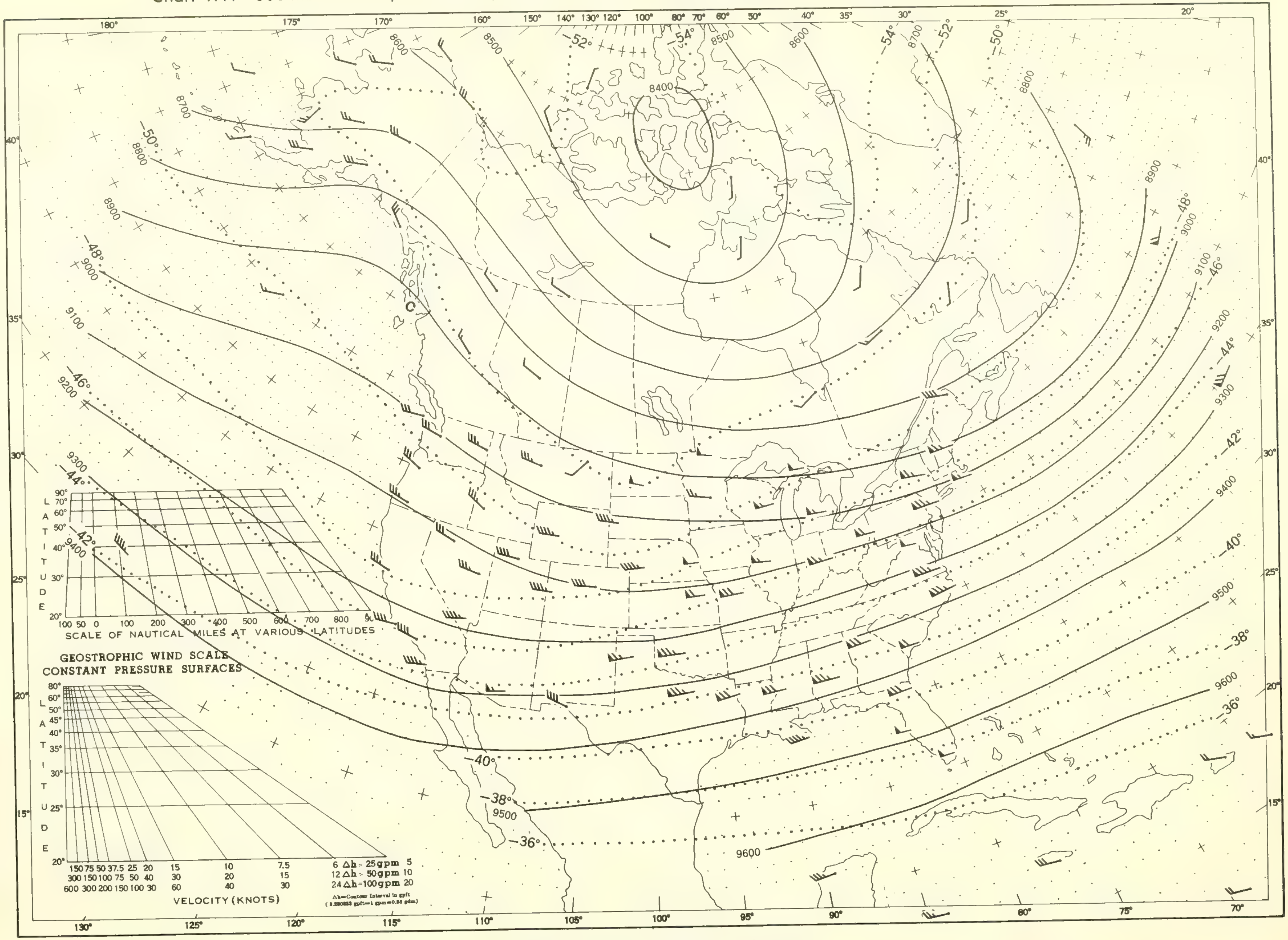
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, January 1960. Average Height and Temperature, and Resultant Winds.



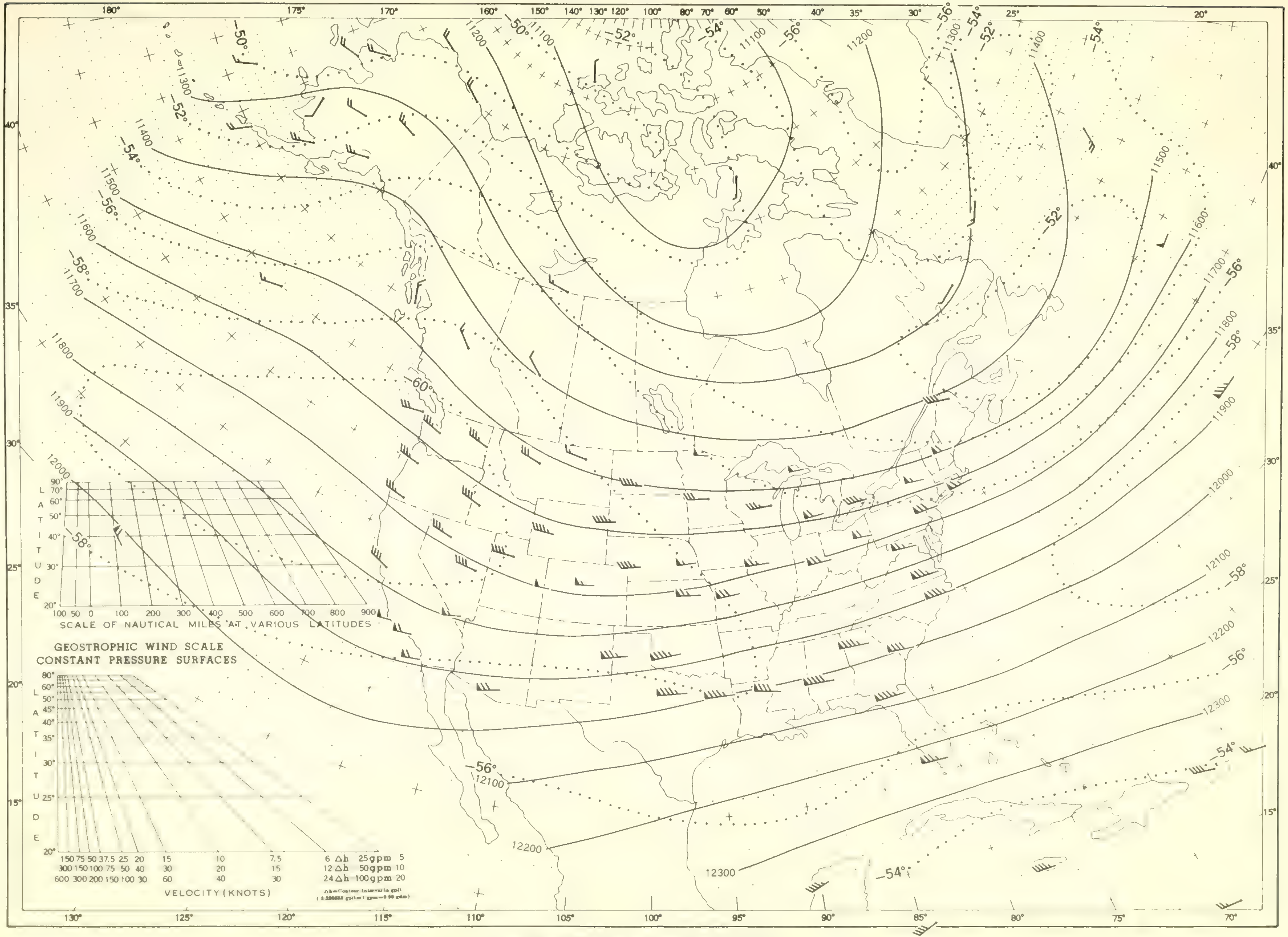
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, January 1960. Average Height and Temperature, and Resultant Winds.



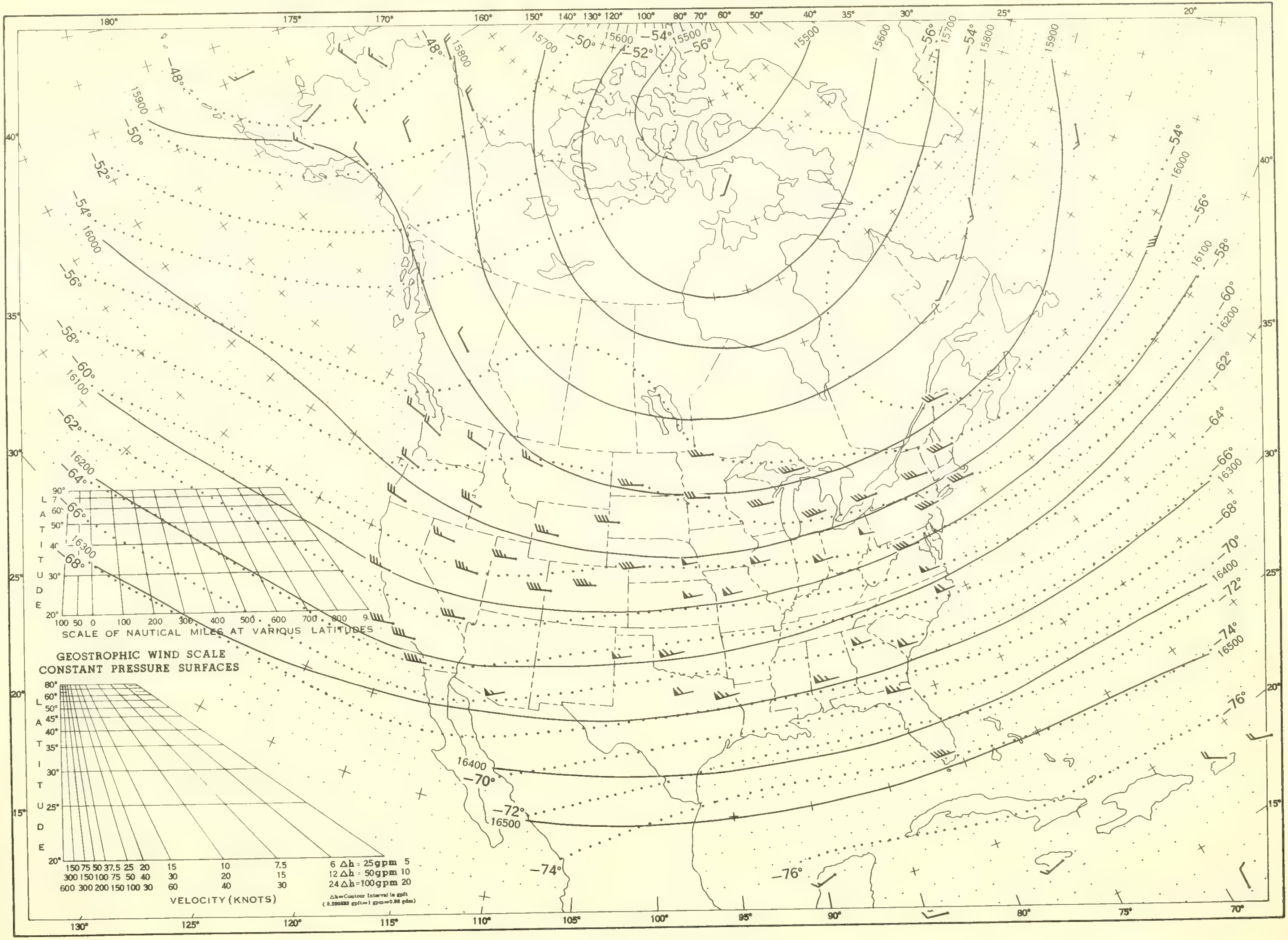
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, January 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, January 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

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FEBRUARY 1960
Volume 11 No. 2

ASHEVILLE: 1960

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 2 FEBRUARY 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

The month was unusually cold and stormy with above normal precipitation in most sections east of the Rocky Mountains. The main exceptions were persistently above normal temperatures in New York and New England, and less than 50 percent of precipitation in the upper Mississippi Valley and eastern North Dakota. Heavy snowfalls from the central Great Plains to the Great Lakes and in the Appalachian region and Northeast sometimes hampered transportation.

In the Far West temperatures were relatively mild along the coast and slightly cooler than normal in the interior. Precipitation was near normal, but the mountain snowpack in many sections remained below normal owing to light snowfall in preceding months.

TEMPERATURE.--Unseasonably mild weather during the last week of January 1960 persisted through the first 7 to 10 days of February. During the remainder of the month the weather became progressively colder. Temperatures for the last week averaged below normal (as much as 30° in the central Great Plains) everywhere, except the extreme Northeast and the southern tip of Florida. Subzero minima extended southward to the High Plains of Texas and northern portions of Arkansas, Mississippi, Alabama, and Georgia; and subfreezing into the lower Rio Grande Valley of Texas and northern Florida. The lowest temperature of the month, -42°, was recorded at West Yellowstone, Mont., on the 29th.

Unseasonably high temperatures were recorded east of the Rockies on the 9th and 10th as warm air flowed northward in front of an intense cyclone in the southwestern Great Plains. Rio Grande, Tex., recorded 102°, scattered stations throughout the South reported maxima in the 80's, and temperatures in the 70's were reported from Kansas, Missouri, West Virginia, Pennsylvania, Maryland, and Delaware.

Temperatures for the month averaged as much as 10° below normal in the central Great Plains and 6° below in the lower Great Plains and Southeast. This was the coldest February in more than 40 years in the west-central Great Plains, the coldest since 1929 in the southwestern Great Plains, and the coldest since 1936 in portions of the central Great Plains and middle Mississippi Valley.

PRECIPITATION.--Precipitation east of the Rockies, relative to normal, was particularly heavy in portions of the Atlantic Coastal States, in an area around lower Lake Michigan, and in the central Great Plains. Several stations in the East reported the wettest February on record. Among these were Apalachicola, Fla., 9.19 inches; Greensboro, N. C., 5.81 inches; and Buffalo, N. Y., 5.80 inches. South Bend, Ind., measured 4.53 inches, its greatest amount for February since 1909, and Dodge City, Kans., 1.80 inches, and Roanoke, Va., 7.17 inches, their greatest February amounts since 1912. In the Southeast precipitation at intervals throughout the month kept soils too wet to work and caused prolonged minor flooding along many streams.

The Far West received most of its precipitation during the first half of the month. Three to 4 inches of rain fell along the north Pacific coast during three storms the first week, and heavy rains on the 7th and 8th caused flooding along the Eel and Russian Rivers in northern California. In southern Arizona where the month was very dry, Phoenix received only 0.04 inch for its driest February since 1925.

SNOWFALL.--Snowfall was unusually heavy from the central and lower Great Plains to the Great Lakes, and also in the Northeast and lower Appalachian region. Scattered stations reported record totals for February. Some of these stations and their total inches of snowfall are Roanoke, Va., 27.6; Goodland, Kans., 25.4; Youngstown, Ohio, 20.8; Kansas City, Mo., 20.7; Lincoln, Nebr., 19.2; Caribou, Maine, 41.0; Moline, Ill., 19.3; Huntington, W. Va., 17.1; Lexington, Ky., 16.4; and Lake Charles, La., 5.0. Many other stations listed their second heaviest snowfall for February. Among these were Denver, Colo., 18.3 inches; Rockford, Ill., 19.5; Concordia, Kans., 22.0; Marquette, Mich., 45.6; Vicksburg, Miss., 10.0; Syracuse, N. Y., 50.5; Knoxville, Tenn., 23.3; and Milwaukee, Wis., 34.0 inches.

Of the several snowstorms east of the Rockies during the month, four were outstanding and accounted for a large portion of the monthly totals. The first of these storms crossed the central Great Plains on the 9th and then swung northeastward over the Great Lakes and Northeast on the 11th. Falls during this storm ranged from 1 to 4 inches in Kansas, 2 to 6 inches in South Dakota, 8 to 15 inches in Michigan, and up to 18 inches in southeastern Wisconsin.

The second major snowstorm began in the Big Bend region of Texas on the 11th and extended over south Texas and the central Gulf States on the 12th. Falls in Texas generally ranged from 3 to 7 inches from the Big Bend to the coastal plains, with record falls up to 12 inches measured in an area east and southeast of San Antonio. Heavy snowfall extended from south Texas northeastward through southwestern Louisiana, central Mississippi, Alabama, Georgia, and the Carolinas into the Ohio Valley and Middle Atlantic and Northeastern States. Snowfall totaled more than a foot in sections of Mississippi, Tennessee, North Carolina, Virginia, West Virginia, Pennsylvania, and New York. Severe drifting occurred in the Northeast.

A third major storm, which developed over Texas on the 17th and moved along the Gulf Coast to Mississippi and then northeastward reaching New England on the 20th, produced snow as far south as Mississippi and Georgia. Falls of 10 to 15 inches were reported in Tennessee and Kentucky, up to 22 inches in West Virginia and eastern New York, and 20 inches in southwestern and central Maine. Severe drifting blocked many highways in Pennsylvania and New York.

Snowfalls during two storms the last week of the month were moderate to heavy from the central and southwestern Great Plains to New England. Up to 16 inches fell in Kansas, 6 to 8 inches in Oklahoma, 5 to 12 inches in Arkansas, and 4 to 8 inches in Illinois, Kentucky, Pennsylvania, and Ohio.

At the end of the month snow covered the ground as far south as Arizona and New Mexico, Oklahoma, northern Arkansas, the Ohio Valley, West Virginia, and northern New Jersey. In the Far West where snowfall had been below normal in preceding months, February snowfall was not sufficient to bring the mountain snowpack up to normal.

DESTRUCTIVE STORMS AND OTHER UNUSUAL PHENOMENA.--Probably heavy snowfall was responsible for greater losses than any other weather element, due to cost of snow removal and transportation delays. Winds accompanying these storms also caused widespread light to locally moderate to heavy damage.

One of the most notable cyclones of the month moved out of the Rockies across the central and lower Great Plains to the Great Lakes. During its passage accompanying winds caused minor damage in a number of places; and a number of stations recorded their lowest sea level pressure of record on the 9th, some of which are listed here:

Station	Pressure (msl)
Fort Smith, Ark.	28.85
Denver, Colo.	28.83
Goodland, Kans.	28.91
Topeka, Kans.	28.82
Wichita, Kans.	28.71
St. Louis, Mo.	28.82
Springfield, Mo.	28.77
Scottsbluff, Nebr.	28.95
Roswell, N. Mex.	29.11
Oklahoma City, Okla.	28.81
Amarillo, Tex.	28.89
Dallas, Tex.	28.96
Laredo, Tex.	29.20
Wichita Falls, Tex.	28.92

The lowest pressure reported on the 9th was 28.70 (m.s.l.) at Ponca City, Okla. Lander, Wyo., also recorded a record low pressure of 28.92 (m.s.l.) on the 8th. Winds whipped up a major duststorm in the southwestern Great Plains, and some tornadoes occurred in the middle Mississippi Valley.

CONDENSED CLIMATOLOGICAL SUMMARY

FEBRUARY 1960

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Andalusia 3NE	82	11	New Market 2	-1	15	Ashland	7.24	Colbert Steam Plant	1.89
Arizona	Wellton	82	8	Maverick	-15	23	Junipine	3.71	Montezuma	.00
Arkansas	De Queen	81	9	Gravette	-1	26	Little Rock Filt. Pl.	5.66	St. Francis	1.43
California	Indio US Date Garden	85	7	Boca	-11	24	Strawberry Valley	21.58	Calexico 2NE	.09
Colorado	2 Stations	65	9+	Taylor Park	-39	18	Sedalia 4SSE	5.70	Del Norte	.15
Connecticut	Bulls Bridge Dam	62	11	Salisbury	8	14	Round Pond	6.80	Bridgeport WB AP	3.14
Delaware	Georgetown 5SW	70	10	Middletown 2S	13	16	Selbyville	5.88	Dover	3.41
Florida	Stuart Radio WSTV	89	11	2 Stations	23	20	Daytona Beach	9.86	Miami Beach	.98
Georgia	Folkston 9SW	80	10	Blairsville Exp. Sta.	0	15	Suches	10.80	Fairmount	2.97
Idaho	Buhl	60	8	Island Park Dam	-37	29	Idaho City 11SW	5.50	Chilly Barton Flat	.36
Illinois	Cairo WB City	68	[illegible]	Freeport	-10	13	Gridley	3.72	Walnut	.92
Indiana	Oolitic Purdue Exp. F.	64	10	Frankfort Disposal Pl.	-4	29	La Porte	6.48	New Harmony	1.83
Iowa	Bedford	53	8	Sibley	-17	29	Albia Pasture Imp. Frm.	2.63	Inwood 2W	.12
Kansas	Independence	75	9	Atwood	-21	25	Lindsborg	3.61	Harlan	.83
Kentucky	2 Stations	69	10	Somerset 1N	-11	20	LaGrange 1SW	6.45	Paducah	1.70
Louisiana	do	81	10+	Tallulah Delta Lab.	8	14	Enon 7WSW	7.41	Vermilion Lock	2.73
Maine	Bridgton 1NNW	53	4	Squa Pan Dam	-25	1	Bar Harbor	9.87	Jackman	3.05
Maryland	3 Stations	70	10	Oakland 1SE	-3	16	Conowingo Police Brks.	5.22	Centreville	2.25
Massachusetts	Lake Cochituate	59	12	2 Stations	1	25	Chesterfield	6.34	Pittsfield WB AP	3.06
Michigan	Monroe Waterworks	51	10	Kenton U S Forest	-22	14	Bloomingdale	4.75	Spalding	.34
Minnesota	St. Peter 2SW	54	15	Bigfork	-25	13+	Caledonia	.66	3 Stations	T
Mississippi	Saucier Ext. Station	82	10	Pelahatchie	-2	14	Pearlington 2NNE	6.75	Arkabutla Dam	2.19
Missouri	2 Stations	75	10+	3 Stations	-7	29+	New Madrid	3.53	Maryville 2E	.40
Montana	Ballantine	64	7	West Yellowstone	-42	29	Heron 2NW	3.90	2 Stations	.04
Nebraska	2 Stations	58	8	Gordon	-25	25	St. Ann 2S	3.26	Niobrara	.26
Nevada	North Las Vegas Dox	78	8	Mountain City RS	-26	29	Mt. Rose Highway Sta.	9.27	Mina	.04
New Hampshire	Keene	57	11	First Conn Lake	-10	5	Pinkham Notch	7.59	Monroe 5NNE	2.12
New Jersey	2 Stations	68	12+	High Point Park	3	3	Paterson	6.44	High Point Park	1.95
New Mexico	Artesia	82	9	Gavilan	-29	18	Lake Maloya	5.56	8 Stations	T
New York	N Y Westerleigh Stat. Is.	66	11	Gouverneur	-14	8	Cortland	7.09	2 Stations	1.49
North Carolina	Asheboro 2W	79	10	Celo 2S	-5	15	Tryon	11.29	Tomotla	3.65
North Dakota	Hettinger	54	7	Grafton	-30	19	Forbes 13NW	.54	Numerous Stations	T
Ohio	Chilo Dam 34	67	10	Tom Jenkins Dam	-8	15	Chilo Dam 34	4.57	Plymouth	1.45
Oklahoma	2 Stations	85	9	4 Stations	-2	28+	Gage FAA Airport	4.64	Regnier	.73
Oregon	Port Orford	68	6	Austin 3S	-30	27	Valsetz	20.10	Lower Hay Creek	.35
Pennsylvania	Donora	71	10	2 Stations	-5	15	Long Pond 2W	7.95	Bakerstown 3WNW	2.22
Puerto Rico	2 Stations	93	26+	do	51	12+	Guineo Reservoir, P. R.	8.14	Estate Fort Mylner, V. I.	.31
Rhode Island	Greenville	56	11	Greenville	14	13	Kingston	7.55	Greenville	5.15
South Carolina	Conway	78	11	Landrum 5ENE	10	15	Caesars Head	10.38	Georgetown Marine Docks	3.77
South Dakota	Fort Meade	64	7	Deerfield 5NW	-33	28	Lead	1.78	Clear Lake	T
Tennessee	2 Stations	73	9	Greenville Exp. Sta.	-4	15	Lockhart Tower	6.06	Dyersburg FAA AP	1.62
Texas	Rio Grande City 2ESE	102	10	2 Stations	-8	25	Beaumont Exp. Farm	7.65	Presidio	.00
Utah	St. George PH	66	9	Woodruff	-33	29	Alta	13.02	Hite	T
Vermont	Vernon	57	12	Enosburg Falls	-12	22	Mays Mill	6.24	Gilman	1.67
Virginia	Boykins	74	10	Pennington Gap	-2	15	Woolwine 4S	9.72	Saltville	2.34
Washington	Everett	63	1	Anatone	-14	28	Aberdeen 20NNE	18.88	Irene Mt. Wauconda	.56
West Virginia	Logan	71	11	Mannington 1N	-11	15	Canaan Valley	6.78	Lewisburg	2.27
Wisconsin	Dodge	50	16	Gordon 2ESE	-23	14	Racine	3.53	St. Croix Falls	.17
Wyoming	2 Stations	62	7	Bondurant 3NW	-40	29+	Moose	3.07	Diversion Dam	.04

+ And also on an earlier date or dates.

Note· Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

FEBRUARY 1960

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb.	°F	°F.	°F.	°F.	°F.		°F.		#		°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	990.5	1016.5	54	33	43.6	-4.1	72	10	19	15	0	15	34	73	3.36	-2.01	1.15	11	1	2.3	2	12.1	N	59	SE	4	6	7	16	6.8	48
Huntsville	605	993.1	1017.0	49	30	39.5	----	71	10	8	15	0	20	32	75	2.58	----	.61	11	2	7.2	6	9.3	N	*37	E	4	7	3	19	7.0	--
Mobile	211	1014.2	1016.5	60	39	49.3	-5.7	74	10	25	14	0	7	38	70	4.88	-.12	1.99	9	2	T	T	12.9	N	*46	SW	10	7	9	13	6.3	--
Montgomery	195	1008.0	1016.6	58	37	47.6	-4.0	78	10	25	15	0	7	36	67	4.14	-.78	1.61	12	0	T	0	10.5	N	38	SW	10	6	8	15	6.6	55
ALASKA																																
Anchorage	90	1004.7	1010.2	30	15	22.7	4.1	42	21	4	29	0	29	19	81	.45	-.15	.18	7	0	8.5	21	6.1	NE	*23	SSE	22	1	5	23	8.4	25
Annette	110	1009.5	1013.7	44	34	39.0	2.9	53	1	26	27	0	8	30	72	11.43	4.13	2.93	16	0	.6	T	12.0	SE	*35	SSE	12+	5	2	22	7.9	--
Barrow	22	1018.6	1019.2	-2	-15	-8.3	9.6	32	28	-32	16	0	29	-17	65	.13	-.03	.06	5	0	1.3	13	15.4	E	*45	ESE	17	12	4	13	5.6	--
Barter Island	39	1018.3	1020.4	-3	-15	-8.8	9.2	28	29	-35	10	0	29	-16	71	.08	-.29	.05	4	0	.8	13	16.8	E	*51	E	8	11	5	13	5.6	--
Bethel	125	1004.7	1006.4	20	5	12.5	3.4	45	29	-31	14	0	28	6	74	.23	-.62	.11	[illegible]	0	5.4	16	6.9	NNE	*54	S	18	5	6	18	7.1	--
Cold Bay	90	998.0	1002.5	35	25	30.0	1.6	45	29	2	14	0	20	25	81	2.42	-.42	.98	15	0	4.5	2	18.1	SSE	*48	SSE	25+	1	7	21	8.3	--
Cordova	40	1008.1	1009.8	40	27	33.3	7.2	47	28	11	12	0	26	29	86	5.80	.34	2.95	15	0	22.9	4	4.3	ENE	*20	ESE	5+	3	4	22	8.1	--
Fairbanks	436	996.3	1014.7	15	-9	3.0	6.1	31	26+	-29	13	0	29	-3	42	.38	-.14	.24	5	0	6.5	27	3.9	NNE	*13	NNE	16	5	9	15	6.7	--
Juneau	17	1012.5	1013.1	39	28	33.4	6.1	42	28+	19	26	0	21	29	86	2.05	-1.41	.49	17	0	2.3	1	6.5	E	*31	ESE	12	2	4	23	8.7	30
King Salmon	44	1003.7	1006.1	31	15	22.8	4.8	45	28+	-27	15	0	25	19	82	.39	-.77	.19	9	0	7.4	8	12.5	N	*48	[illegible]	24	1	6	22	8.4	--
Kotzebue	10	1011.9	1012.5	9	-5	1.9	6.6	33	29+	-33	2	0	29	-3	81	.46	.13	.17	11	0	5.7	18	13.8	ESE	*46	ESE	17	7	7	15	6.4	--
McGrath	334	998.6	1012.2	16	-7	4.6	4.2	40	27	-35	1	0	29	-4	68	.41	-.78	.23	4	0	7.5	34	3.3	WNW	*13	SSW	27	5	8	16	6.9	--
Nome	13	1007.5	1008.4	18	4	11.1	5.4	35	25+	-31	13	0	29	6	77	.93	-.03	.42	13	0	9.3	31	15.2	E	*48	E	16	4	3	22	7.6	19
Sheyma	122	992.9	996.8	33	26	29.5	----	39	27	19	17+	0	29	24	78	1.73	----	.38	21	0	11.6	6	23.8	N	*58	W	23+	0	7	22	8.4	--
St. Paul Island	22	997.3	998.3	31	22	26.4	2.6	38	29+	-1	14	0	27	23	85	1.13	-.04	.21	20	0	9.4	7	----	---	--	---	--	0	4	25	8.9	--
Yakutat	28	1010.2	1011.5	40	27	33.6	5.6	49	28	14	11	0	20	28	83	8.99	.38	2.35	17	0	23.8	13	6.5	ENE	*26	ESE	7	5	5	19	7.7	--
ARIZONA																																
Flagstaff	6993	------	------	39	13	25.8	-3.0	54	7	-6	23	0	29	--	--	1.82	.02	.87	8	0	24.7	11	----	---	--	---	--	11	5	13	5.7	--
Phoenix	1114	976.6	1016.5	63	40	51.5	-2.8	70	8+	29	25	0	2	30	46	.04	-.78	.03	2	0	.0	0	6.9	NE	*26	W	9+	13	6	10	4.7	93
Prescott	5014	845.2	1016.9	50	24	37.1	-2.3	62	8	13	24	0	27	20	55	1.05	-.33	.70	6	1	3.1	1	10.4	SW	49	SW	9	12	5	12	5.1	72
Tucson	2584	926.2	1015.7	61	34	47.8	-5.4	76	8	24	25	0	12	25	45	.42	-.53	.39	4	1	T	0	9.3	SE	49	W	2	14	13	2	3.6	86
Winslow	4880	849.6	1015.8	50	24	37.0	-2.8	63	8	15	23	0	26	17	47	.33	-.15	.22	5	0	.7	T	12.2	WSW	*44	WNW	9	10	7	12	5.3	--
Yuma	199	1011.9	1017.3	72	45	58.1	-2.0	80	8+	32	25	0	1	24	32	.07	-.23	.04	2	0	.0	0	8.2	N	29	N	11	15	8	6	3.9	84
ARKANSAS																																
Fort Smith	458	999.7	1017.2	47	28	37.4	-7.2	78	9	14	26	0	21	28	72	2.67	-.48	.89	10	0	11.5	6	9.5	ENE	41	SW	9	5	6	18	7.2	50
Little Rock	257	1003.4	1016.9	48	32	39.9	-5.7	77	9	24	14	0	17	30	71	4.37	.16	1.94	12	2	9.6	5	8.6	WNW	46	WSW	9	8	4	17	6.7	43
Texarkana	361	------	1016.2	51	33	42.3	-7.2	80	9	20	25	0	15	--	--	4.52	.27	.99	14	2	4.1	4	11.5	WNW	--	---	--	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	1002.4	1020.9	62	42	51.9	-.6	70	12+	35	23	0	0	43	74	1.56	.40	.46	10	0	.0	0	4.5	ENE	*44	WNW	8	6	4	19	6.9	--
Bishop	4108	874.0	1016.6	56	25	40.4	-.9	70	6	12	17	0	26	--	--	.81	-.13	.77	5	0	T	0	----	---	--	---	--	10	5	14	5.8	--
Blue Canyon	5280	838.1	1018.0	44	29	36.3	.2	55	14	21	23+	0	23	--	--	16.87	7.04	8.30	11	1	31.9	28	10.8	SSW	61	SSW	8	6	4	19	7.1	--
Burbank	699	992.2	1018.9	65	44	54.7	.7	75	17	36	25	0	0	37	58	2.00	-1.17	.81	6	0	.0	0	4.4	ESE	*31	NNW	13	12	6	11	5.0	--
Eureka (U)	43	1017.3	1019.6	55	42	48.4	.0	64	4	33	27	0	0	--	--	7.48	1.63	2.32	16	2	.0	0	8.3	Φ N	48	SW	8	6	7	16	6.8	57
Fresno	331	1007.8	1020.0	59	40	49.5	-1.2	67	12	34	22	0	0	42	77	2.37	.65	1.01	10	0	.0	0	6.0	NW	28	NW	13+	9	4	16	6.6	54
Long Beach	34	1018.3	1019.6	65	46	55.6	----	76	17	40	25+	0	0	43	67	2.95	----	1.45	[illegible]	0	.0	0	7.4	W	*33	WSW	9	13	5	11	4.8	--
Los Angeles (U)	312	------	------	65	49	57.0	.6	74	17+	43	24	0	0	44	66	2.26	-1.21	.91	5	0	.0	0	6.8	Φ W	31	NW	19	13	9	7	4.6	71
Los Angeles	99	1015.2	1019.1	63	48	55.3	1.2	73	17	40	25+	0	0	45	71	2.90	.05	1.55	6	0	.0	0	9.5	W	*29	W	18+	13	3	13	4.9	--
Mt. Shasta (U)	3544	892.7	1019.0	46	27	36.7	-.2	58	24	13	27	0	24	--	--	7.60	2.20	2.79	14	0	17.0	8	----	---	--	---	--	14	6	9	4.8	--
Oakland	3	1020.0	1020.2	60	44	51.9	1.2	65	20	36	24	0	0	43	72	2.99	-.52	.83	10	2	.0	0	8.7	WNW	*35	WSW	8+	11	4	14	6.0	--
Point Arguello	367	1006.1	1019.5	59	43	50.9	----	69	6	33	24+	0	0	--	--	2.80	----	1.12	11	0	.0	0	9.2	---	*35	WNW	10	11	4	14	5.3	--
Red Bluff	341	1006.4	1019.4	59	41	49.8	-.1	68	20	33	17	0	0	34	61	4.27	.63	1.66	11	0	.0	0	11.7	N	47	SE	8	7	11	11	5.8	73
Sacramento	17	1018.6	1019.5	59	42	50.8	1.1	64	20	34	24	0	0	40	69	3.34	.48	1.09	9	0	.0	0	10.1	NW	40	W	8+	9	7	13	6.0	67
Sandberg (R)	4517	863.2	1018.6	46	34	39.9	-.9	64	7	24	24	0	15	--	--	.88	-1.93	.33	9	0	2.6	2	16.8	N	*77	NW	10	10	6	13	5.6	--
San Diego	19	1015.9	1019.0	65	49	56.9	.6	74	17	42	24	0	0	44	65	1.45	-.89	.70	[illegible]	0	.0	0	6.5	WNW	27	SW	1	14	[illegible]	9	4.7	67
San Francisco (U)	52	------	------	60	49	54.3	1.3	65	20+	45	19	0	0	--	--	3.57	-.46	1.28	9	1	.0	0	8.2	Φ W	35	SW	1	--	--	--	----	67
San Francisco	8	1019.6	1020.3	59	44	51.5	.7	63	7	37	24	0	0	45	77	4.38	.83	1.53	9	0	.0	0	10.4	WNW	52	WSW	8	10	6	13	5.7	--
Santa Maria	238	1011.2	1020.3	62	41	51.3	-.5	72	16+	32	25	0	1	43	74	4.01	1.46	1.66	[illegible]	0	.0	0	7.3	WNW	*29	SW	1	14	0	15	5.2	--
COLORADO																																
Alamosa	7536	765.7	1020.0	31	-7	11.9	-11.1	39	1	-23	25+	0	29	--	--	.56	.37	.19	9	0	11.3	4	----	---	--	---	--	6	13	10	6.2	--
Colorado Springs	6173	805.6	1018.5	33	10	21.7	-10.1	59	7	-11	28	0	29	10	62	.73	.38	.26	10	0	9.5	4	10.8	N	*38	NNW	9	3	9	17	7.6	--
Denver	5292	833.7	1017.5	36	14	24.8	-7.2	60	8	-11	28	0	28	11	60	1.66	1.11	.59	14	0	18.3	6	9.9	SSW	27	NE	22	2	7	20	7.8	64
Grand Junction	4849	857.8	1018.2	38	21	29.4	-2.6	45	8+	7	28	0	29	17	62	1.26	.61	.53	11	2	13.8	8	7.6	ESE	27	W	9	3	8	18	7.3	58
Pueblo	4639	853.7	1018.1	35	14	24.6	-9.5	55	13	-15	28	0	27	17	73	.68	.18	.27	12	0	11.0	4	7.5	W	47	W	9	4	10	15	7.0	60
CONNECTICUT																																
Bridgeport	7	1011.1	------	42	28	34.9	5.9	55	11	18	3	0	24	--	--	3.14	.06	1.07	10	2	1.6	1	----	---	--	---	--	7	6	16	6.4	--
Hartford	169	1004.9	1011.2	41	25	33.0	4.9	57	11	17	13+	0	24	22	66	5.28	2.62	1.80	9	0	4.6	5	9.6	WNW	50	NW	27	6	8	15	6.9	47
New Haven	6	1010.5	------	42	27	34.8	5.7	53	11	19	15+	0	23	--	--	4.27	.86	.96	12	1	5.0	3	10.7	---	34	W	15+	7	5	17	6.6	64
DELAWARE																																
Wilmington	78	1009.9	1013.1	44	28	35.9	2.2	66	11	17	16	0	25	26	28	3.69	.61	1.06	11	2	5.1	3	12.2	WNW	42	WNW	19	7	6	16	6.7	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	46	31	38.4	.9	66	10	21	16	0	19	--	--	4.50	1.78	1.59	10	--	----	--	----	---	--	---	--	--	--	--	----	--
Wash. Nat'l. AP	14	1009.8	1014.3	45	31	38.3	1.2	68	10	20	16	0	19	24	59	3.33	.80	1.19	10	0	7.2	5	12.6	WNW	54	NE	18	8	8	13	6.3	52
FLORIDA																																
Apalachicola (U)	13	1014.0	------	61	45	52.6	-4.3	69	10+	32	19	0	1	--	--	9.19	5.10	3.38	9	5	.0	0	9.8	---	40	SE	4	12	7	10	4.8	67
Daytona Beach	31	1014.8	1016.7	68	48	57.8	-2.7	80	11+	34	19	0	0	48	76	9.13	6.62	3.57	12	3	.0	0	10.1	NW	*44	SSW	18	11	6	12	5.4	--
Fort Myers	15	1015.4	------	74	52	62.9	-2.7	83	12	36	20	0	0	--	--	3.66	1.65	1.93	10	2	.0	0	----	---	*31	[illegible]	10	8	11	10	5.6	--
Jacksonville	24	1015.2	1016.4	66	43	54.8	-2.7	80	10	29	20	0	4	44	71	5.17	2.41	2.39	9	2	.0	0	10.1	WNW	41	SW	18	11	8	10	5.2	64
Key West	4	1014.5	------	74	63	68.8	-2.8	83	11	53	20	0	0	--	--	1.94	.25	.65	6	1	.0	0	10.0	---	29	NW	13	9	14	6	4.9	76
Lakeland (U)	214	------	------	70	50	60.0	-3.4	82	11	36	19	0	0	--	--	4.01	1.60	2.19	11	4	.0	0	8.3	---	--	---	--	10	8	11	5.7	52
Miami	7	1014.7	1016.1	76	59	67.4	-1.3	85	22	43	20	0	0	58	74	2.20	.35	1.02	5	0	.0	0	7.9	SSE	23	W	13	7	12	10	5.4	--
Miami Beach	9	------	------	75	62	68.6	-1.6	84	29	47	15	0	0	--	--	.98	-.84	.29	8	0	.0	0	----	---	¢27	S	13	9	11	9	5.0	68
Orlando	106	1012.0	1016.7	70	49	59.7	-3.5	82	25	36	19+	0	0	50	75	5.64	3.51	2.56	12	2	.0	0	11.4	NW	35	WNW	18	11	7	11	5.7	--
Pensacola (U)	13	------	------	59	43	50.9	-5.1	70	10	28	14	0	0	--	--	6.63	2.53	3.09	10	3	.0	0	†12.5	---	34	SE	3	--	--	--	----	67
Tallahassee	64	1013.3	1016.0	63	40	51.8	-3.8	75	29	29	20+	0	3	41	71	9.00	4.82	2.81	11	3	.0	0	7.7	NW	25	NW	18	9	9	11	5.4	--
Tampa	19	1015.2	1016.7	69	51	60.3	-2.6	81	12	35	20	0	0	50	73	3.70	1.10	2.02	10	4	.0	0	10.2	NW	35	W	13	8	10	11	5.7	72
West Palm Beach	15	1015.2	1016.4	75	56	65.5	-2.2	88	11	41	15	0	0	57	75	4.54	2.25	1.99	9	3	.0	0	10.2	NW	29	WSW	18	10	5	14	5.9	--
GEORGIA																																
Athens	798	986.4	1016.0	53	32	42.7	-3.9	67	9	18	15	0	16	32	71	6.33	1.19	1.79	10	2	.2	T	10.2	WNW	*32	WNW	18	9	8	12	6.1	--
Atlanta	975	973.2	1016.0	53	34	43.8	-2.9	68	10	20	15	0	11	32	68	6.27	.27	1.40	13	1	T	T	13.0	NW	*29	WNW	19+	5	[illegible]	15	6.6	51
Augusta	143	1008.7	1015.7	57	35	45.9	-2.9	75	5	22	15	0	12	35	72	5.68	1.81	1.99	10	2	T	T	7.5	WNW	*29	W	19+	7	7	15	6.2	--
Columbus	385	1001.7	------	59	35	47.0	-2.6	76	10	23	15	0	12	--	--	4.87	.03	1.50	11	1	T	0	10.1	---	*52	SSW	10	5	7	17	6.7	--
Macon	356	1002.0	1015.9	59	36	47.5	-4.0	72	2	24	15	0	9	35	67	8.46	4.03	2.53	12	1	.0	0	10.3	WNW	60	NE	4	7	7	15	6.4	52
Rome	637	992.6	------	52	30	41.1	-3.9	74	10	17	15	0	21	--	--	3.93	-1.66	.84	11	2	.0	0	6.4	---	--	---	--	7	7	15	6.7	--
Savannah	48	1013.3	1016.1	61	38	49.6	-3.8	72	5	24	15	0	[illegible]	40	73	6.59	3.66	3.34	12	2	.0	0	10.0	WNW	44	W	18	12	4	13	5.5	61
Thomasville	283	------	------	62	41	51.6	-4.3	73	28	28	15	0	4	--	--	6.87	2.91	3.20	12	2	.0	0	----	---	--	---	--	--	--	--	----	--
HAWAII																																
Hilo	31	1014.9	1016.3	78	62	70.2	-.5	87	5	55	23	0	0	61	75	15.97	6.12	6.20	13	4	.0	0	8.9	SW	*30	ENE	12	1	17	11	7.0	36

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature								No. of days				Precipitation			No. of days		Snow, Sleet		Wind					No. of days (sunrise to sunset)				
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Fastest mile Speed	Fastest mile Direction	Fastest mile Date	Clear	Partly cloudy	Cloudy	Sky cover tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb.	°F	°F.	°F.	°F	°F		°F				°F	%	In.	In.	In.			In.	In	M. p. h.		M. p. h			0–3	4–7	8–10	0–10	%
HAWAII (Cont'd.)																																
Honolulu	7	1016.9	1017.6	79	66	72.4	0.0	84	29+	56	21	0	0	60	67	0.51	-2.09	[illegible]	7	0	0.0	[illegible]	10.7	NE	34	NE	[illegible]	7	10	[illegible]	[illegible]	64
Lihue	115	1012.2	1017.3	78	64	70.9	.8	86	7	53	21	0	0	61	72	4.14	-.44	[illegible]	[illegible]	[illegible]	.0		12.1	NE	31	[illegible]	[illegible]	[illegible]	14	[illegible]	[illegible]	[illegible]
IDAHO																																
Boise	2842	921.4	1020.2	41	26	33.6	-.4	52	8	11	29+	0	26	25	72	1.74	.35	[illegible]	14	0	4.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]
Idaho Falls 46W (R)	4933	847.3	1023.4	26	-2	11.7	-8.9	38	19+	-31	29	0	29		--	1.33	.75	[illegible]	8	[illegible]	15.0	[illegible]	5.2	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		
Idaho Falls 42NW (R)	4790	------	------	26	-3	11.2	-7.3	40	8	-34	29	0	29	[illegible]		[illegible]	.38	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					
Lewiston	1413	966.8	1019.7	45	28	36.4	.5	56	7	9	28	0	20	-	--	.64	-.40	.28	10	0	[illegible]	[illegible]								[illegible]	[illegible]	
Pocatello	4444	862.5	1021.1	31	13	22.2	-6.3	46	8	-20	29	0	29	18	81	1.28	.32	.54	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ILLINOIS																																
Cairo (U)	314	1003.1	------	43	30	36.3	-4.3	68	9	18	29	0	23	--	--	1.96	-1.48	.69	11	1	[illegible]	[illegible]	9.9	N	[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chicago (O'Hare)	656	990.9	1016.5	30	20	24.6	----	42	8	4	20	0	28	19	78	2.70	----	1.00	[illegible]	[illegible]	[illegible]	8	13.7	NNW	[illegible]	NE	[illegible]		[illegible]	[illegible]	7.9	
Chicago (Midway)	610	992.6	1016.5	31	21	25.8	-1.6	44	8	7	29	0	28	20	78	3.16	1.69	1.54	14	[illegible]	[illegible]	7	14.4	W	[illegible]	NE	[illegible]			[illegible]	[illegible]	[illegible]
Moline	589	994.9	1018.3	29	15	22.3	-4.3	45	8	-4	13	0	28	17	78	2.78	1.56	1.78	11	[illegible]	[illegible]	[illegible]	[illegible]	WNW	[illegible]	NE	10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Peoria	654	994.6	1017.8	30	18	24.0	-4.3	45	8	[illegible]	22	0	28	18	78	1.98	.00	.80	11	[illegible]	[illegible]	[illegible]	[illegible]	WNW	10	N	[illegible]	[illegible]	8	[illegible]	[illegible]	[illegible]
Rockford	728	988.8	1017.4	29	16	22.3	-2.3	43	8	[illegible]	13	0	28	18	79	1.76	.35	1.01	11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Springfield	589	993.6	1017.7	33	20	26.5	-4.3	43	16	[illegible]	29	0	27	[illegible]	[illegible]	2.15	.47	.64	[illegible]		[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INDIANA																																
Evansville	383	1000.3	1016.7	40	26	32.7	-4.8	62	9	9	29	0	24	[illegible]	73	[illegible]	-.46	.79	11	2	[illegible]		[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Fort Wayne	801	983.7	1014.6	32	20	26.4	-1.6	57	10	3	29	0	28	21	79	2.60	.77	[illegible]	12	2	13.1	[illegible]	12.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Indianapolis	793	985.4	1016.3	35	21	28.1	-3.4	61	10	1	29	0	27	21	72	3.28	1.12	1.38	10	2	9.2	6	10.6	WNW	[illegible]	NW	6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
South Bend	768	986.5	1015.7	31	19	25.1	-1.3	42	5+	5	29	0	28	21	82	4.53	2.91	1.68	[illegible]	1	28.3	[illegible]	13.4	[illegible]	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
IOWA																																
Burlington	694	991.9	1018.9	30	16	23.2	-4.8	46	8	-2	22	0	28	[illegible]	78	2.03	[illegible]	.61	[illegible]	2	14.8	[illegible]	[illegible]	NW	[illegible]	NW	21	[illegible]	[illegible]	8	[illegible]	[illegible]
Des Moines	948	987.5	1020.3	27	12	19.4	-6.6	44	8	-5	29+	0	28	[illegible]	[illegible]	1.58	.45	[illegible]	[illegible]	0	18.5	[illegible]	[illegible]	NNW	[illegible]	[illegible]	[illegible]	8	[illegible]	[illegible]	[illegible]	[illegible]
Dubuque	1065	991.9	1018.5	27	12	19.5	-3.1	39	8	-1	29	0	29	15	76	1.66	[illegible]	.80	10	[illegible]	[illegible]	18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sioux City	1094	979.0	1021.2	24	7	15.4	-7.8	42	8	-15	29	0	29	12	81	.85	.07	.37	10	0	[illegible]	[illegible]	11.8	NW	[illegible]	N	[illegible]	[illegible]	[illegible]	14	[illegible]	[illegible]
Waterloo	870	------	------	27	13	20.0	-2.5	44	8	-8	29	0	29	--	81	.75	.30	[illegible]	[illegible]	0	[illegible]	7	12.2	--	--	[illegible]	[illegible]	[illegible]	-	-	[illegible]	[illegible]
KANSAS																																
Concordia (U)	1375	967.5	------	31	17	24.2	-8.7	57	8	1	28	0	26		71	2.09	1.20	.78	11	0	22.0	[illegible]	[illegible]	NW	28	N	[illegible]	[illegible]	[illegible]	11	[illegible]	[illegible]
Dodge City	2594	927.5	1018.4	34	17	25.1	-9.9	56	7	4	28+	0	27	21	84	1.80	.99	.75	10	0	11.9	[illegible]	16.2	NNW	41	NW	[illegible]	8	[illegible]	[illegible]	[illegible]	[illegible]
Goodland	3645	886.6	1018.7	29	11	20.0	-10.2	50	13	-19	25	0	28	16	84	1.60	1.10	.51	12	0	25.4	[illegible]	12.2	N	[illegible]	NNW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Topeka	877	982.1	1019.5	34	19	26.4	-7.0	57	8	1	22	0	27	18	70	2.14	1.13	.66	8	0	[illegible]	[illegible]	11.1	NW	[illegible]	E	9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wichita	1321	967.5	1018.0	36	21	28.7	-8.5	61	9+	3	28+	0	26	21	74	[illegible]	.39	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14.8	NNW	[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
KENTUCKY																																
Lexington	979	980.0	1017.0	38	24	31.0	-5.0	59	10+	6	20	0	24	[illegible]	[illegible]	4.55	[illegible]	1.56	11	[illegible]	16.4	[illegible]	[illegible]	[illegible]	--	--	--	[illegible]	[illegible]	[illegible]	[illegible]	
Louisville	474	996.8	1016.6	41	27	33.8	-3.4	63	10	[illegible]	15	0	23	25	[illegible]	4.31	1.20	1.63	[illegible]		10.7		[illegible]	NW	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LOUISIANA																																
Alexandria	107	1011.9	1016.5	56	33	44.6	----	74	9	11	14	0	16	38	79	5.16	----	1.35	12	1	8.8	[illegible]	7.9	[illegible]	--	--	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Baton Rouge	64	1013.5	1016.6	58	38	48.1	-7.5	75	28	22	14	0	8	40	76	3.26	1.26	.95	[illegible]	2	1.0		10.3	[illegible]	--	--		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Lake Charles	12	1014.9	1016.6	57	39	48.0	-7.9	72	28	27	13	0	6	40	77	[illegible]	[illegible]	1.58	[illegible]	[illegible]	5.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New Orleans (U)	9	------	------	60	45	52.3	-6.2	77	10	32	13	0	1	--	76	[illegible]	2.11	2.31	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New Orleans	3	1013.9	1016.4	60	39	49.6	-7.8	77	10	23	14	0	6	43	79	[illegible]	.65	1.59	9	2	[illegible]	[illegible]	[illegible]	NNE	[illegible]	NNE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Shreveport	252	1007.1	1016.7	53	35	44.0	-8.0	81	9	22	26+	0	[illegible]	32	69	[illegible]	.58	1.29	10	1	[illegible]		[illegible]	[illegible]	-	-		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAINE																																
Caribou	624	985.1	1009.3	30	16	22.9	13.1	38	11	-16	1	0	29	19	84	3.69	1.90	.82	18	0	41.0	[illegible]	[illegible]	WNW	[illegible]	WNW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Portland	61	1005.1	1009.3	38	20	28.8	7.3	50	4	5	22+	0	27	22	78	6.38	2.42	2.76	11	0	28.4	[illegible]	[illegible]	W	[illegible]	[illegible]	6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MARYLAND																																
Baltimore (U)	14	------	------	45	31	38.0	.4	67	11	20	14+	0	20	--	--	5.17	2.08	1.60	10	--	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
Baltimore	146	1009.1	1013.9	45	28	36.2	1.2	68	11	16	16	0	24	25	62	4.95	1.86	1.65	10	0	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Frederick	294	------	------	42	26	33.8	-.3	62	10	[illegible]	16	0	25	--	--	3.10	.42	1.05	10	0	[illegible]											
MASSACHUSETTS																																
Blue Hill Obs.	629	984.5	------	40	25	32.3	----	[illegible]	11	[illegible]	[illegible]	0	25	--	70	4.55	.88	1.32	12	--	[illegible]	[illegible]	18.8	WNW	[illegible]	ENE	[illegible]					[illegible]
Boston	15	1004.5	1009.3	42	28	35.3	6.1	56	11	20	15+	0	23	24	66	4.84	1.81	1.53	11	0	[illegible]	[illegible]	16.3	WNW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.3	[illegible]
Nantucket	43	1009.1	1009.9	41	30	35.5	4.4	50	11	[illegible]	15+	0	22	26	72	4.80	1.25	1.56	10	[illegible]	[illegible]	1	17.8	WNW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.6	[illegible]
Pittsfield	1153	------	------	35	19	27.0	5.3	55	11	-8	15+	0	28	--	--	3.06	.47	1.49	[illegible]	--	[illegible]	[illegible]										—
Worcester	986	971.7	1009.3	35	21	28.3	4.2	53	11	11	[illegible]	0	28	[illegible]	67	[illegible]	2.77	1.79	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W	[illegible]	W	[illegible]	[illegible]	[illegible]	[illegible]		
MICHIGAN																																
Alpena	689	988.8	------	29	10	19.3	-1.0	38	16	-8	29	0	29	[illegible]	75	1.45	-.32	.65	11	0	19.5	[illegible]	[illegible]	NW	[illegible]	NE	[illegible]	[illegible]	[illegible]	[illegible]	7.5	[illegible]
Detroit(City AP)	619	987.5	1015.1	33	22	27.5	.8	49	10	15	24+	0	28	19	72	2.29	.19	.77	16	1	14.8	[illegible]	[illegible]	WNW	[illegible]	NW	19	[illegible]	[illegible]	[illegible]	8.6	[illegible]
Detroit (M. Wayne Co.)	630	990.2	1015.1	34	21	27.4	----	48	10	11	29	0	28	20	74	2.25	[illegible]	.70	16	0	[illegible]	[illegible]	[illegible]	W	—	—		[illegible]	[illegible]	[illegible]	8.8	
Detroit (Willow Run)	722	985.4	1014.7	34	21	27.4	1.3	49	10	12	29	0	28	20	75	2.26	.45	.72	14	0	[illegible]	[illegible]	[illegible]	WNW	[illegible]	WNW	[illegible]		3	25	8.7	
Escanaba (U)	594	992.9	------	29	15	21.7	4.1	39	8	1	29	0	29	--	75	.77	-.64	.24	11	0	[illegible]	[illegible]	12.0	[illegible]	16	N	[illegible]	[illegible]	1	15	7.3	[illegible]
Flint	761	985.8	1015.2	30	16	22.9	-.4	41	16+	[illegible]	23	0	29	18	80	1.67	-.05	.41	14	0	[illegible]	[illegible]	[illegible]	WNW	[illegible]	WNW	[illegible]	[illegible]	1	23	8.6	[illegible]
Grand Rapids	681	989.5	1015.8	31	19	24.8	1.0	39	16	4	13	0	29	19	79	[illegible]	.90	1.05	15	0	[illegible]	[illegible]	10.1	NW	[illegible]	N	[illegible]	[illegible]	[illegible]	22	8.5	[illegible]
Lansing	852	982.1	1015.4	31	15	23.0	-1.2	42	5	2	24	0	29	18	80	[illegible]	.77	.83	14	0	[illegible]	[illegible]	14.0	W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	22	8.4	[illegible]
Marquette (U)	677	989.2	------	27	17	21.6	2.7	41	15	11	29	0	29	--	77	2.30	.52	.54	20	0	45.6	[illegible]	9.7	NW	[illegible]	N	[illegible]	[illegible]	9	20	8.4	[illegible]
Muskegon	627	991.9	1016.0	31	20	25.2	.7	38	8	7	13	0	29	19	76	3.07	1.37	.90	19	0	35.9	[illegible]	11.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	23	8.5	
Sault Ste. Marie	721	992.6	1016.2	25	10	17.3	3.8	34	17	[illegible]	2	0	29	[illegible]	80	1.49	-.08	.41	16	0	15.9	[illegible]	10.1	NW	[illegible]	NW	[illegible]		[illegible]	16	7.2	[illegible]
MINNESOTA																																
Duluth	1409	976.0	1019.7	24	3	13.5	2.5	36	8	-9	11	0	29	6	72	[illegible]	[illegible]	[illegible]	10	0	11.8	[illegible]	12.1	NNW	[illegible]	[illegible]	[illegible]	[illegible]	2	[illegible]	6.4	[illegible]
Intern'l Falls	1179	977.3	1021.2	22	-1	10.8	3.6	39	4	-19	20	0	29	5	71	[illegible]	[illegible]	.21	[illegible]	0	3.5	[illegible]	6.9	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.8	—
Minneapolis	830	984.8	1020.1	26	10	17.8	-.4	42	15	-7	19	0	29	10	70	.22	[illegible]	.14	5	[illegible]	2.7	[illegible]	9.6	NNW	[illegible]	[illegible]	[illegible]	[illegible]	7	14	6.0	[illegible]
Rochester	1017	980.4	1019.6	28	10	18.8	.8	45	15	-5	19	0	29	12	73	.31	-.18	.27	5	[illegible]	4.0	[illegible]	11.8	NW	—	—		[illegible]	8	[illegible]	6.3	
St. Cloud	1034	980.4	1020.7	24	3	13.1	-.5	38	8	-11	19+	0	29	7	72	.09	-.66	.04	4	0	1.0	[illegible]		-	-	-	--	[illegible]	[illegible]	[illegible]	5.9	—
MISSISSIPPI																																
Jackson	305	1004.2	1016.6	54	33	43.5	-7.5	72	9	10	14	0	15	[illegible]	[illegible]	4.56	[illegible]	1.54	[illegible]	[illegible]	9.1	[illegible]	[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	6		6.5	[illegible]
Meridian	292	1003.0	1016.8	55	33	44.2	-6.5	74	10	14	14	0	14	36	[illegible]	4.87	[illegible]	1.36	[illegible]	[illegible]	3.1	[illegible]	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	6	16	6.7	
Vicksburg (U)	234	1007.2	------	53	37	44.9	-7.2	72	9	22	14	0	9	--	--	5.62	[illegible]	2.49	[illegible]	[illegible]	10.0	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	17	[illegible]	[illegible]
MISSOURI																																
Columbia	778	988.5	1018.3	35	21	28.2	-5.5	53	16	6	22+	0	25	22	74	1.85	.22	.39	[illegible]	[illegible]	14.3	[illegible]	[illegible]	NW	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kansas City	741	982.1	1018.5	35	22	28.3	-6.3	57	8	8	22	0	22	19	[illegible]	2.62	1.41	.83	[illegible]	[illegible]	20.7	[illegible]	10.1	[illegible]	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
St. Joseph	809	982.7	------	32	19	25.4	-6.4	55	8	9	29	0	27	--	[illegible]	1.35	.30	.53	[illegible]	[illegible]	9.0	[illegible]	14.0	NNW	[illegible]	NNW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
St. Louis (RFC)	465	------	------	37	25	31.3	-5.4	62	9	12	22	0	24	--	[illegible]	1.28	-.69	.32	10	[illegible]	7.3											
St. Louis	552	996.3	1017.6	37	24	30.8	-4.9	59	9	11	22	0	24	24	78	1.19	-.54	.34	[illegible]	[illegible]	9.8	[illegible]	[illegible]	WNW	[illegible]	[illegible]	[illegible]	[illegible]	7	18	[illegible]	[illegible]
Springfield	1265	969.5	1017.1	40	23	31.4	-5.4	71	9	7	26	0	22	22	72	2.26	.43	1.10	[illegible]	0	15.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		6	18	[illegible]	[illegible]

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station		Pressure		Temperature								No. of days				Precipitation			No. of days		Snow, Sleet		Wind					No. of days (sunrise to sunset)				
																									Fastest mile							
	Elevation (ground)	Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
MONTANA																																
Billings	3567	889.6	1018.0	34	16	25.3	-0.8	63	7	-13	27	0	27	15	70	0.53	0.07	0.18	11	0	7.8	3	11.4	SW	45	W	7	4	9	16	7.4	59
Butte	5530	826.3	1021.4	29	2	15.5	-3.3	44	7	-33	28	0	29	8	--	.22	-.33	.09	6	0	7.2	4	6.6	NW	*31	NW	21	4	5	20	7.9	--
Glasgow	2277	942.4	1020.4	21	5	12.9	-1.6	45	7	-22	27	0	29	10	85	.32	-.04	.06	11	0	3.8	5	----	---	--	---	--	5	5	19	7.5	--
Great Falls	3664	886.9	1017.9	33	15	23.9	-.7	50	7	-20	27	0	26	12	63	.52	-.08	.20	11	0	6.1	4	9.7	SW	47	SW	7	10	6	13	6.5	60
Havre (U)	2488	926.9	1020.0	29	9	19.0	.1	50	7	-15	26	0	29	--	--	.32	-.08	.10	6	0	6.3	3	9.0	①NE	56	SW	7	4	9	16	7.1	51
Helena	3893	872.0	1019.7	32	15	23.8	.4	53	7	-18	28	0	28	13	65	.25	-.18	.09	6	0	3.7	1	8.1	W	42	W	7	7	5	17	6.9	66
Kalispell	2965	------	------	30	9	19.3	-5.7	42	7	-22	28	0	29	--	--	.83	-.12	.20	11	0	13.9	12	----	---	--	---	--	3	7	19	7.5	--
Miles City	2629	932.3	1020.5	28	8	18.2	-1.9	55	7	-24	27	0	29	12	--	.37	-.01	.14	9	0	4.3	3	9.3	NW	*32	NW	7	7	3	19	7.4	--
Missoula	3200	902.1	1020.5	35	17	25.7	.0	48	7	-13	28	0	29	17	72	.53	-.32	.18	10	0	7.4	5	6.6	ESE	26	W	7	2	8	19	8.1	41
NEBRASKA																																
Grand Island	1841	950.9	1020.4	27	10	18.6	-9.1	51	8	-15	29	0	27	14	80	1.14	.46	.45	11	0	7.7	5	10.4	NNW	--	---	--	5	7	17	7.3	--
Lincoln (U)	1166	------	------	27	13	20.2	-9.1	50	8	-3	29+	0	28	--	--	2.10	1.14	.80	8	0	19.2	10	9.7	NW	36	N	9	8	4	17	6.7	47
Norfolk	1544	962.4	1021.1	23	7	14.9	-8.7	44	8	-15	29	0	28	9	73	1.02	.20	.47	7	0	10.3	10	----	---	--	---	--	7	8	14	6.6	--
North Platte	2779	915.7	1019.3	28	11	19.7	-9.0	46	8	-16	29	0	28	13	84	1.28	.92	.70	13	0	7.3	4	8.3	N	33	N	9	3	4	22	8.2	36
Omaha	978	978.3	1020.7	27	12	19.2	-8.0	48	8	-7	13	0	28	14	77	1.17	.26	.35	12	1	13.4	9	13.2	NNW	39	N	9	9	6	14	6.0	54
Omaha N.Omaha AP	1323	969.5	------	24	10	16.9	-7.8	43	8	-8	29	0	28	--	--	1.59	.68	.45	13	0	16.9	14	----	---	--	---	--	9	6	14	6.3	--
Scottsbluff	3950	877.1	1018.3	34	14	24.2	-4.0	53	7	-9	29+	0	29	15	71	.50	.07	.21	8	0	4.8	2	10.6	WNW	*35	WNW	15	2	8	19	7.8	--
Valentine	2587	924.8	------	26	4	14.8	-10.5	44	8+	-18	28	0	29	--	83	1.19	.70	.54	9	0	5.2	3	8.3	W	24	N	17+	3	9	17	7.4	55
NEVADA																																
Elko	5075	844.2	1019.1	36	18	26.9	-1.5	50	8	2	29	0	28	19	69	1.13	.15	.74	11	1	5.1	5	5.3	SW	*29	SW	8	1	11	17	7.5	--
Ely	6257	806.6	1018.3	36	11	23.3	-4.8	47	7	-8	3	0	29	15	66	.70	-.24	.25	10	0	8.3	7	11.3	S	45	SE	8+	3	8	18	7.4	74
Las Vegas	2162	950.6	1017.2	57	35	46.0	-4.4	75	8	26	25	0	7	20	39	.42	-.18	.29	5	0	T	0	10.3	SW	*35	SW	9	13	4	12	5.3	80
Reno	4404	862.5	1018.7	48	24	36.1	-.2	59	6	14	24	0	26	24	64	1.19	.11	.56	6	0	3.0	1	7.7	S	54	SW	8	7	6	16	6.9	76
Winnemucca	4299	868.6	1019.6	43	21	31.7	-2.8	55	8+	3	24	0	28	22	68	1.31	.27	.72	6	1	2.6	2	7.6	S	47	SW	8	5	9	15	7.0	36
NEW HAMPSHIRE																																
Concord	339	998.7	1010.0	38	20	29.2	8.0	53	11	10	4	0	28	21	73	2.82	.43	.68	10	0	12.6	13	10.0	NW	38	E	19	7	11	11	6.2	57
Mt.Washington Obs.	6262	791.7	------	17	2	9.5	4.0	32	11	-16	15	0	29	--	90	14.67	9.92	4.09	19	0	102.4	11	42.0	W	‡130	W	27	3	5	21	8.1	29
NEW JERSEY																																
Atlantic City (U)	10	------	------	44	31	37.2	1.8	54	11	19	3	0	22	--	--	4.01	.66	1.26	--	--	----	--	14.9	---	43	W	19	--	--	--	----	51
Atlantic City	58	1010.1	1011.5	45	29	36.7	2.1	63	11	18	3	0	24	26	67	5.71	2.62	1.88	9	2	3.6	1	16.4	W	*43	W	19	7	4	18	6.5	--
Newark	11	1010.9	1012.2	44	29	36.3	4.6	66	11	18	3	0	24	24	61	4.11	.90	1.02	11	1	5.2	1	12.3	WNW	35	ENE	18	6	10	13	6.5	--
Trenton (U)	56	1004.8	------	44	29	36.2	3.5	67	11	18	3	0	24	--	--	4.05	1.30	1.16	15	3	4.3	1	12.0	---	49	W	19	8	8	13	6.4	57
NEW MEXICO																																
Albuquerque	5310	844.9	1013.6	48	25	36.5	-3.0	63	8	12	25	0	27	17	49	.38	.03	.18	4	0	.8	1	10.0	N	47	W	9	6	15	8	5.7	63
Clayton	4969	840.8	1014.2	39	17	27.8	-8.8	58	7	0	28+	0	28	--	--	.48	.09	.33	5	0	5.1	3	----	---	--	---	--	6	9	14	6.6	--
Raton	6379	799.5	1014.2	37	12	24.5	-7.5	61	8	-7	21	0	29	--	--	.66	.27	.30	9	0	8.3	4	----	---	--	---	--	6	7	16	6.9	--
Roswell	3612	890.3	1013.2	55	25	40.0	-4.8	77	8	-1	25	0	25	20	50	.43	-.05	.33	5	0	4.4	4	13.1	---	70	NW	9	11	10	8	5.2	--
NEW YORK																																
Albany	277	1007.8	1011.7	35	21	28.0	5.1	54	11	4	4	0	26	20	72	2.85	.75	.89	8	0	13.5	7	11.8	WNW	46	W	20+	3	5	21	8.1	54
Binghamton	1590	950.4	1011.2	32	20	26.1	4.5	50	11	9	3+	0	27	20	79	3.98	1.59	1.41	17	2	39.4	19	12.6	NW	47	W	27+	1	4	24	8.7	29
Buffalo	693	984.3	1013.6	33	21	27.2	2.5	53	5	10	3+	0	28	21	80	5.80	3.12	1.42	20	0	49.5	13	14.8	W	42	SW	26+	1	5	23	8.6	22
New York (U)	10	1010.0	------	42	29	35.7	3.0	63	11	18	3	0	22	--	--	5.41	2.17	1.55	11	1	1.6	1	17.5	---	65	NW	20	6	8	15	6.5	55
New York	19	1010.0	1011.9	43	30	36.6	4.0	61	11	19	3	0	19	24	62	5.76	2.61	1.79	12	1	3.9	2	16.7	WNW	63	NE	18	6	8	15	6.4	--
Rochester	543	993.4	1013.2	32	20	26.1	2.1	54	11	5	4	0	27	21	81	4.46	1.95	1.50	20	0	58.3	21	13.7	WSW	41	W	27	1	5	23	8.5	34
Schenectady	217	------	------	37	23	29.7	7.8	53	11	11	4	0	26	--	--	2.02	-.28	.54	7	--	12.8	10	----	---	--	---	--	10	11	8	4.7	--
Syracuse	424	988.7	1012.3	34	20	27.0	1.9	50	10	4	4	0	27	21	78	4.90	2.29	1.24	21	0	50.5	20	12.5	WSW	39	W	12	2	2	25	8.6	27
NORTH CAROLINA																																
Asheville (U)	2203	934.0	------	46	27	36.6	-4.2	61	2	11	15	0	22	--	--	4.19	1.23	1.63	8	1	8.5	5	10.4	---	31	NW	14	8	8	13	6.1	52
Cape Hatteras	9	1013.9	1014.6	55	39	46.8	-.8	69	10	26	24	0	7	37	72	6.11	1.95	1.94	12	0	.0	0	13.3	NNE	--	---	--	11	5	13	5.4	--
Charlotte	725	986.3	1015.2	53	32	42.6	-1.8	68	10	16	15	0	13	30	65	6.31	2.62	1.88	9	1	3.3	2	10.7	NE	33	SE	10	10	7	12	5.8	61
Greensboro	891	983.0	1015.9	49	29	38.7	-2.3	66	10	16	15	0	22	27	67	5.81	2.56	1.72	9	2	8.6	8	11.7	ENE	35	NW	18	11	7	11	5.5	69
Raleigh	433	1001.1	1015.3	51	30	40.5	-2.6	70	10	18	15	0	19	28	65	5.26	1.89	1.72	9	2	4.7	2	9.1	W	*30	NW	19	11	8	10	5.2	64
Wilmington	30	1014.0	1015.2	56	36	46.4	-2.3	72	11+	26	15	0	11	36	72	4.75	1.33	1.87	8	1	T	0	13.2	NW	40	SW	18+	12	6	11	5.3	65
Winston-Salem	967	979.2	1015.3	49	30	39.3	-1.9	65	10	16	15	0	20	24	58	5.40	1.89	1.61	9	2	9.4	9	11.6	WNW	*43	NE	13	11	8	10	5.2	--
NORTH DAKOTA																																
Bismarck	1650	958.3	1022.2	23	6	14.4	1.7	44	7	-12	19	0	29	9	79	.15	-.30	.10	5	0	2.2	3	11.7	WNW	42	W	8+	3	11	15	7.1	42
Devils Lake (U)	1471	965.1	------	18	-2	8.1	-.6	40	7	-18	19	0	29	--	--	.16	-.27	.08	6	0	2.3	7	7.4	NW	45	NW	8	7	7	15	6.8	71
Fargo	895	985.4	1022.3	20	2	11.3	.5	38	8+	-17	19	0	29	6	78	.06	-.63	.03	3	0	1.2	4	14.4	N	54	NW	8	5	11	13	6.5	63
Williston (U)	1877	949.9	1021.3	21	5	12.7	-.8	45	7	-16	21	0	29	6	74	.39	-.09	.13	10	0	3.4	3	6.7	SE	33	W	7	3	6	20	7.9	49
OHIO																																
Akron	1210	973.8	1015.2	34	21	27.4	-.7	56	10	9	15	0	26	22	82	2.32	.12	.53	25	0	16.5	8	14.1	WNW	--	---	--	1	3	25	9.0	--
Cincinnati Obs.	761	------	------	38	25	31.4	-3.4	59	10	12	23	0	25	--	--	3.51	.88	1.19	14	1	9.8	3	8.0	---	26	SW	25	--	--	--	----	23
Cincinnati	869	983.4	1016.5	38	24	30.6	-3.3	60	10	12	29+	0	26	22	71	3.49	.86	1.17	15	1	12.1	4	11.5	WSW	29	WSW	25	2	6	21	8.5	--
Cleveland	787	985.9	1014.8	35	24	29.5	.9	59	10	13	15	0	25	23	79	1.87	-.33	.47	21	0	14.6	4	12.4	WSW	37	S	26	1	1	27	9.2	15
Columbus (U)	724	------	------	37	25	30.8	-1.8	55	10	13	29	0	25	--	--	2.67	.44	.99	14	1	8.3	3	----	---	--	---	--	--	--	--	----	--
Columbus	815	985.4	1016.6	35	22	28.8	-2.4	54	4	10	15	0	26	23	78	2.57	.22	.92	14	1	9.7	3	11.3	WSW	42	W	22	0	5	24	9.1	14
Dayton	1002	978.3	1016.1	35	22	28.4	-3.0	56	10	7	29	0	26	22	77	2.30	.12	.70	13	1	8.8	4	13.5	WNW	40	NW	19	1	5	23	8.8	30
Mansfield	1296	------	------	32	21	26.5	----	54	10	8	29	0	27	--	--	2.67	----	.65	20	0	14.6	4	----	---	--	---	--	0	4	25	9.2	--
Sandusky (U)	603	992.7	------	33	23	28.3	-1.1	56	10	12	29	0	28	--	--	2.66	.67	.53	15	1	11.6	5	11.1	---	37	SW	25+	1	7	21	8.2	37
Toledo	676	986.3	1015.5	34	22	27.5	.2	55	10	10	29	0	28	22	79	3.13	1.21	.99	16	1	14.2	6	10.2	WSW	35	NW	19	0	6	23	8.8	37
Youngstown	1178	970.5	1014.6	34	21	27.3	-.9	56	10	9	15	0	26	21	79	3.15	.33	.58	20	0	20.8	6	14.5	SW	33	SW	6	1	4	24	8.9	--
OKLAHOMA																																
Oklahoma City	1280	971.6	1017.4	43	26	34.5	-7.3	73	9	10	25	0	24	26	76	2.12	.83	1.20	9	0	5.4	3	14.0	N	61	W	9	4	11	14	6.6	55
Tulsa	672	991.9	1017.3	45	25	35.0	-7.0	81	9	11	26	0	22	26	74	2.65	1.02	.94	10	0	10.1	4	10.7	N	34	NW	10	6	5	18	6.9	44
OREGON																																
Astoria	8	1016.9	1017.4	51	37	43.7	.6	58	6	22	28+	0	8	37	78	8.47	-1.28	1.71	20	1	.0	0	10.6	ESE	*35	S	6	4	6	19	7.7	--
Burns (U)	4140	872.3	1018.6	38	18	27.7	-3.5	48	5	-4	27	0	28	20	73	2.09	.82	.93	11	0	8.7	12	----	---	--	---	--	4	8	17	7.1	--
Eugene	361	1004.7	1018.7	50	34	42.4	-.3	61	6	20	29+	0	11	--	--	6.54	1.54	2.09	18	1	.0	0	9.7	---	*37	S	1	5	4	20	7.5	--
Meacham	4050	------	------	33	21	26.7	-2.3	43	7+	-3	27	0	29	--	--	3.77	-.44	1.01	14	0	31.9	30	----	---	--	---	--	3	1	25	8.2	--
Medford	1312	970.9	1019.5	53	32	42.3	-.3	61	12	19	28+	0	15	33	75	4.12	2.03	1.56	12	0	T	0	5.8	N	*30	SSE	3	5	6	18	7.3	--
Pendleton	1492	963.8	1018.6	47	31	39.0	2.4	60	6	10	28	0	14	28	65	.99	-.46	.33	10	0	.4	T	11.3	SE	*47	W	21	7	5	17	6.9	--
Portland	21	1012.9	1018.3	50	35	42.3	.8	57	7	19	27	0	10	34	74	4.00	-.30	.92	17	0	T	T	9.5	E	34	S	1	4	4	21	7.9	37
Roseburg	505	1000.3	1019.3	53	34	43.4	.3	62	6	16	28	0	12	--	--	6.25	2.36	2.04	19	0	.0	0	4.6	---	26	S	1	4	6	19	7.8	31
Salem	195	1011.9	1019.0	50	33	41.6	-1.2	58	7	16	27	0	14	35	79	5.41	-.08	1.47	18	0	T	0	7.7	S	*32	S	1	5	4	20	7.7	--
Sexton Summit (R)	3836	882.8	1019.0	40	28	33.7	-2.7	50	24	18	27	0	26	--	--	8.27	4.55	2.35	16	0	20.8	11	12.2	S	--	---	--	5	7	17	7.2	--
PACIFIC AREA																																
Canton Island	8	1008.8	1009.1	88	77	82.8	-.2	91	8+	74	17	7	0	73	77	4.47	3.90	3.98	6	0	.0	0	16.5	ENE	*29	NE	14	0	0	29	9.9	--
Guam (R)	361	------	------	85	73	78.6	1.2	88	3	64	11	0	0	--	--	.67	-2.23	.21	13	0	.0	0	9.2	① E	24	E	8	--	--	--	----	59
Johnston Island	7	1014.6	1015.2	81	72	76.4	-	84	6	68	23+	0	0	66	71	.41	----	.15	6	0	.0	0	15.0	---	39	NE	19	2	23	4	6.2	72
Koror (R)	94	1006.4	1010.5	86	75	80.6	.2	89	19	72	29	0	0	75	85	10.20	1.93	2.87	19	0	.0	0	7.5	E	20	NE	7	0	3	26	9.3	20

See footnotes at end of table

State and station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F or above	Min. 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	With thunderstorms	Snow, Sleet: Total	Max depth on ground	Wind: Average hourly speed	Prevailing direction	Fastest mile: Speed	Direction	Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M p. h.		M p. h.			0-3	4-7	8-10	0-10	%
PACIFIC AREA (Cont'd.)																																
Majuro	10	1009.8	1010.2	85	78	81.6	----	87	17+	74	10	0	0	73	76	3.60	----	1.35	15	0	0.0	0	15.4	ENE	32	E	23	0	5	24	8.9	70
Ponape (R)	120	1005.1	1010.5	85	76	80.6	-1.3	88	13	72	16	0	0	73	79	12.45	4.30	5.16	23	2	.0	0	8.3	NE	23	NE	24+	0	3	26	9.2	50
Truk, Moen Is.	5	1010.2	1010.5	86	77	81.4	.4	87	22+	74	10+	0	0	75	80	6.30	-1.04	1.28	22	1	.0	0	9.3	NNE	22	NE	19	0	3	26	9.3	40
Wake Island	11	1015.9	1016.3	83	73	77.9	.6	85	17	69	29+	0	0	68	73	.73	-.83	.21	12	0	.0	0	15.6	ENE	*28	ENE	10+	12	13	4	4.3	--
Yap (R)	55	1009.1	1011.2	86	77	81.3	.6	88	28+	75	28+	0	0	75	81	6.23	1.13	3.01	14	0	.0	0	6.5	--	*21	E	8	1	3	25	8.7	78
PENNSYLVANIA																																
Allentown	376	998.2	1012.9	40	26	33.1	4.5	60	11	15	3	0	26	23	69	3.68	.95	1.16	13	0	8.3	3	16.6	W	52	ESE	25	6	9	14	6.6	--
Erie	732	------	1014.2	34	23	28.5	2.0	58	10	7	3	0	26	23	79	2.55	.40	.65	19	1	22.6	8	14.7	WSW	32	SSW	26	3	0	26	8.7	--
Harrisburg	335	999.3	1013.6	41	27	34.1	2.0	62	10	18	16+	0	25	21	60	3.30	.98	1.10	14	2	9.5	4	11.2	W	37	W	20	4	9	16	7.2	59
Philadelphia (U)	35	------	------	45	31	38.2	3.1	67	11	19	3	0	20	--	--	----	----	----	--	--	----	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1008.1	1012.7	44	27	35.4	1.8	64	11	19	3	0	26	24	64	3.44	.32	.99	11	2	3.1	1	12.1	WNW	44	NW	19	4	9	16	7.1	61
Pittsburgh (U)	749	------	------	39	26	32.5	-1.1	67	10	13	3	0	24	--	--	2.67	.23	.81	18	--	16.1	--	----	---	--	---	--	--	--	--	----	26
Pittsburgh	1151	984.1	1015.1	35	22	28.7	-1.1	61	10	8	15	0	26	20	70	3.16	.70	.92	20	0	21.8	12	11.8	W	*30	WSW	26	2	1	26	9.0	35
Reading (U)	266	1000.7	------	42	29	35.6	2.8	61	11+	18	3	0	25	--	--	3.83	1.06	1.49	11	1	7.2	4	15.6	---	56	E	25	4	12	13	6.8	48
Scranton	940	977.4	1012.8	36	23	29.5	2.4	57	11	12	2	0	26	21	69	2.64	.54	.93	15	0	15.4	7	11.4	WNW	50	SE	25	2	7	20	7.7	39
Williamsport	527	994.0	1013.6	39	26	32.3	3.2	59	10	14	14	0	26	21	65	4.81	2.38	1.11	14	2	15.6	10	12.3	WNW	33	WNW	19	4	5	20	7.8	--
RHODE ISLAND																																
Block Island	110	1005.4	------	42	30	35.6	4.7	52	11	21	13	0	21	--	--	5.67	2.31	1.57	9	1	1.9	T	----	---	--	---	--	7	9	13	6.0	--
Providence	55	1004.1	1010.5	43	28	35.1	6.5	55	11	19	13	0	24	23	65	5.63	2.69	1.88	9	1	1.6	1	13.9	NNW	*37	ENE	19	7	9	13	6.2	57
SOUTH CAROLINA																																
Charleston (U)	9	------	------	57	42	49.5	-3.2	70	11	31	15	0	3	--	--	4.42	1.23	1.90	10	--	.0	0	11.7	---	42	SW	18	--	--	--	----	--
Charleston	41	1014.1	1016.2	59	38	48.4	-3.5	72	10	25	15	0	10	38	70	4.06	.82	1.61	10	1	.0	0	10.0	WNW	50	W	18	8	9	12	5.9	73
Columbia	217	1002.7	1015.9	57	34	45.6	-2.9	72	10	21	15	0	14	33	67	5.53	1.77	2.06	11	5	T	0	8.6	NE	35	SW	18	8	9	12	5.8	70
Florence	146	1009.1	1015.1	56	35	45.7	-1.9	73	10	23	15	0	12	33	65	5.62	2.19	1.50	8	3	T	0	8.9	SW	35	WSW	18	12	3	14	5.6	--
Greenville	1018	977.2	1015.2	52	33	42.5	-2.8	65	2	19	15	0	13	28	62	5.65	1.23	1.78	9	1	2.2	1	9.3	NE	32	S	10	8	7	14	6.1	55
Spartanburg	801	------	------	52	32	42.2	-3.2	65	2	18	15	0	14	--	--	6.32	1.94	2.36	9	1	3.4	3	8.9	---	35	W	5	--	--	--	----	--
SOUTH DAKOTA																																
Huron	1282	972.2	1022.3	20	3	11.5	-6.1	41	8	-18	19	0	29	8	82	.76	.25	.39	5	0	6.1	7	11.8	NW	33	N	8+	3	7	19	7.8	56
Rapid City	3165	900.8	1020.2	29	9	19.1	-4.8	61	7	-11	28	0	29	11	76	.85	.51	.39	11	0	8.7	4	10.5	N	34	NW	17	6	6	17	6.8	55
Sioux Falls	1420	966.8	1021.0	23	6	14.2	-5.3	38	8	-12	19	0	29	6	68	.22	-.55	.10	4	0	3.0	5	11.0	NW	*30	WNW	18	8	5	16	6.7	--
TENNESSEE																																
Bristol	1519	960.0	1015.7	46	27	36.7	-3.4	63	25+	1	15	0	23	26	69	2.81	-.72	.90	9	0	12.0	6	9.1	WSW	30	NE	13	5	7	17	7.3	--
Chattanooga	670	988.0	1016.4	49	29	38.9	-5.1	70	10	9	15	0	21	29	72	4.02	-1.27	1.22	9	2	10.4	7	7.6	NNE	32	W	11	5	8	16	7.1	49
Knoxville	950	980.1	1016.2	48	29	38.6	-3.9	71	10	7	15	0	21	28	68	3.00	-1.91	1.27	11	1	23.3	15	9.2	NE	49	SW	25	4	5	20	7.4	44
Memphis (U)	271	------	------	47	33	40.2	-4.3	71	9	23	14	0	17	--	--	1.90	-2.46	.76	12	--	7.0	2	----	---	--	---	-	-	--	--	--	--
Memphis	263	1001.9	1017.2	49	33	40.8	-3.7	72	9	22	14	0	16	30	67	3.08	-1.66	1.05	13	2	7.6	1	10.6	NW	42	SE	4	5	6	18	7.0	49
Nashville	577	996.5	1017.0	44	27	35.6	-6.7	66	9	8	15	0	22	30	81	5.40	1.08	1.92	12	3	15.0	7	8.7	N	38	W	10	5	4	20	7.7	31
Oak Ridge	905	981.0	------	47	28	37.3	-3.7	65	10	7	15	0	20	--	--	3.59	-2.40	.84	10	1	11.3	8	6.1	---	37	---	25	6	5	18	7.2	--
TEXAS																																
Abilene	1759	952.9	1015.4	54	31	42.7	-5.4	82	9	9	25	0	14	26	58	.92	-.02	.45	7	1	1.2	1	13.6	NNW	52	W	9	11	6	12	5.3	64
Amarillo	3590	885.9	1015.0	42	21	31.4	-8.2	61	9+	2	25	0	26	21	68	.95	.30	.53	11	0	5.9	2	13.9	N	66	W	9	8	8	13	5.9	65
Austin	615	993.6	1016.1	58	38	47.9	-6.2	87	9	22	25	0	8	36	68	2.36	-.29	1.21	10	2	T	T	11.1	SSE	34	NW	3	10	5	14	5.8	53
Brownsville	16	1012.5	1015.4	72	49	60.6	-3.3	83	9	29	25	0	1	48	69	1.51	.29	.97	8	0	T	0	12.9	SE	42	NW	12	13	5	11	4.3	55
Corpus Christi	41	1014.9	1016.2	67	44	55.4	-4.9	91	9	27	25	1	3	46	72	1.07	-.43	.64	8	2	T	T	12.7	SSE	40	NW	17	14	5	10	4.6	66
Dallas	487	997.0	1016.5	52	34	43.0	-6.8	87	9	16	25	0	16	31	65	2.83	.12	1.45	11	1	1.6	2	13.4	SSE	52	W	9	10	5	14	5.8	51
Del Rio (U)	957	------	------	64	40	51.9	-5.2	94	9	22	25	1	5	--	--	2.17	1.06	1.37	4	1	.5	T	---	---	--	--	-	--	--	--	--	--
El Paso	3920	884.2	1013.5	59	34	46.2	-2.8	72	8	18	25	0	9	20	38	.37	.00	.22	2	0	2.1	2	14.4	WSW	69	W	3	16	9	4	3.7	79
Fort Worth	544	995.3	1016.7	53	33	43.0	-6.8	87	[illegible]	15	25	0	17	31	68	2.16	-.50	.88	9	1	1.0	1	14.9	N	*51	WSW	9	10	4	[illegible]	6.0	--
Galveston (U)	7	------	------	57	45	51.1	-6.3	69	10	27	25	0	4	--	--	2.29	-.69	.83	10	--	2.2	2	15.1	---	43	NE	12	--	--	--	--	57
Galveston	5	1014.2	1016.8	57	44	50.6	-6.7	70	10	27	25	0	5	42	74	2.89	-.35	.83	10	3	2.0	2	12.0	E	--	--	-	10	5	14	5.8	--
Houston (U)	41	1010.8	------	58	42	50.1	-7.6	75	9	27	25+	0	5	--	--	3.99	1.09	1.11	8	4	3.0	3	12.3	SE	43	NW	17	8	10	11	5.9	54
Houston	50	1013.5	1016.7	58	41	49.7	-6.9	75	9+	26	25	0	5	41	76	3.93	1.14	1.24	10	5	4.4	4	14.5	ESE	-	--	--	8	9	12	6.0	-
Laredo	500	999.7	1015.2	70	44	57.2	-4.7	98	9	26	25	1	1	37	55	1.01	.12	.90	4	0	T	0	11.3	SSE	*39	NNW	17	15	5	9	4.0	--
Lubbock	3243	900.8	1015.2	49	23	36.0	-7.1	75	8	-8	25	0	25	22	62	.94	.39	.46	5	1	9.8	7	15.8	N	*58	WSW	9	10	10	9	5.4	--
Midland	2854	913.6	1013.9	55	30	42.6	-6.4	76	9+	11	25	0	19	25	55	.60	-.14	.24	7	1	2.8	1	14.0	WSW	*67	WSW	9	13	8	8	4.6	--
Port Arthur	16	1014.6	1016.2	58	40	48.9	-7.1	72	10	27	26	0	6	43	81	5.29	.96	2.51	10	4	4.4	4	14.1	E	56	SW	9	9	7	13	6.0	53
San Angelo	1903	946.8	1015.4	57	32	44.9	-6.8	84	9	11	25	0	15	29	59	.38	-.64	.21	4	1	1.2	1	14.9	WSW	*48	WNW	9	13	4	12	4.9	--
San Antonio	792	990.2	1015.8	62	38	49.9	-5.2	87	9	21	25	0	7	37	66	1.22	-.42	.63	9	1	T	0	11.8	NNE	47	NW	9	11	5	13	5.4	53
Victoria	110	1011.2	1016.1	63	41	51.9	-7.0	85	9	24	25	0	5	42	70	2.47	.42	1.00	7	1	4.0	4	13.7	N	‡56	NW	17	9	10	10	5.3	--
Waco	500	994.9	1016.4	56	35	45.7	-6.0	89	[illegible]	19	25	0	12	34	67	1.91	-.82	.87	8	2	.4	T	14.6	SSE	*38	NNW	17	10	6	13	5.9	--
Wichita Falls	1020	978.3	1016.4	50	29	39.5	-6.3	80	9	7	25	0	20	27	65	1.28	-.26	1.14	5	2	2.2	1	12.3	N	*32	NW	23+	9	11	9	5.6	
UTAH																																
Milford	5028	942.9	1018.3	39	19	29.4	-1.5	52	8	2	24	0	27	--	--	.71	-.03	.20	15	0	8.0	3	- --	---	--	--	-	4	6	19	7.2	
Salt Lake City	4220	868.3	1020.0	37	20	28.7	-4.7	56	8	-4	29	0	26	22	75	1.58	.30	.37	13	1	18.2	5	7.5	S	34	S	8	2	7	20	8.1	53
Wendover	4237	871.0	1018.3	40	25	32.5	----	55	8	8	29	0	27	--	--	.38	----	.18	10	1	3.9	2	----	---	--	--	--	5	8	16	7.0	
VERMONT																																
Burlington	331	996.0	1011.3	32	17	24.5	6.4	48	11	-1	22	0	27	17	75	1.98	.40	.72	13	0	19.3	10	9.1	SSW	29	NE	20+	1	7	21	8.1	39
VIRGINIA																																
Lynchburg	947	979.9	------	45	28	36.8	-2.4	62	10	16	15	0	24	--	--	4.64	2.08	1.35	8	2	14.0	12	9.7	---	33	NE	13	7	11	11	5.9	58
Norfolk	26	1014.9	1014.8	50	33	41.4	-.6	73	10	25	16+	0	17	30	67	3.57	.40	1.51	8	0	3.9	4	13.6	WNW	49	NE	13	13	3	13	5.4	69
Richmond	162	1008.7	1015.1	49	29	39.3	-.4	70	10	16	16	0	22	25	61	4.56	1.71	1.12	9	2	8.9	8	9.8	W	31	W	19	9	9	11	5.9	64
Roanoke	1174	971.6	1015.0	45	29	36.6	-2.6	64	9	14	16	0	23	23	61	7.17	4.52	1.84	10	0	27.6	15	12.2	WNW	--	---		7	10	12	6.4	--
WASHINGTON																																
Olympia	190	1009.8	1017.4	49	31	40.2	.2	56	7	14	29+	0	16	34	81	5.93	-.42	1.46	16	0	T	T	7.3	SW	*35	W	14	3	7	19	7.3	
Seattle (U)	14	------	------	49	40	44.7	1.2	57	4	30	28+	0	4	--	--	3.45	-.42	1.36	13	--	.0	0	----	---	62	SW	14					39
Seattle	14	1016.6	1017.4	--	--	----	----	--	--	--	--	--	--	31	65	----	----	----	--	--	----	--	7.7	S	--	---	--	--	--	--	----	--
Seattle-Tacoma	386	1003.4	1017.7	47	36	41.2	.3	53	4	25	27	0	10	33	74	4.01	-.07	1.56	13	1	.0	0	10.8	S	*36	S	2	3	10	16	7.4	--
Spokane	2357	947.9	1018.4	37	24	30.6	.9	47	12	4	27	0	29	23	74	1.64	.13	.53	10	0	3.5	2	9.0	NE	37	SW	14+	2	6	21	8.0	44
Stampede Pass(R)	3958	877.1	1018.5	29	22	25.6	-1.4	38	7	6	28	0	29	--	--	12.92	1.46	2.64	21	0	95.6	87	----	---	--	--	--	3	4	22	8.4	--
Tatoosh Island(R)	101	1013.5	1017.5	43	40	44.1	.9	52	6+	34	27+	0	0	35	73	7.87	-1.12	1.89	15	0	T	T	18.4	E	65	E	7	2	8	19	7.7	44
Walla Walla (U)	949	981.7	1018.3	48	33	40.1	1.8	61	6	15	29+	0	10	--	--	1.28	-.30	.44	9	0	.1	T	6.3	SE	43	E	[illegible]	4	7	18	7.4	57
Yakima	1061	979.0	1019.2	45	25	35.1	.9	55	7	7	27	0	28	25	69	1.43	.60	.46	9	0	1.2	1	7.2	WNW	*37	W	20	7	8	14	6.3	--
WEST INDIES																																
San Juan, P.R. (U)	47	------	------	83	72	77.3	2.4	89	23	68	17	0	0	--	--	3.91	1.17	3.22	10	1	.0	0	- -			-						--
San Juan, P.R.	15	1013.1	1016.1	85	67	76.3	2.2	89	23	64	26+	0	0	69	82	3.33	.18	2.53	10	0	.0	0	6.0	ENE	22	NE	29	9	16	4	4.6	82
Swan Island	31	1012.1	------	83	75	78.9	.7	86	29	70	15+	0	0	--	--	.35	-1.30	.12	5	0	.0	0	----	---				10	16	3	4.3	--
WEST VIRGINIA																																
Charleston	950	979.3	1015.7	42	26	34.0	-4.2	66	10	12	20+	0	23	22	63	4.08	.46	1.01	14	0	21.5	9	9.0	WSW	28	SE	25+	1	[illegible]	19	8.2	
Huntington (U)	565	------	------	43	27	34.7	-4.3	67	10	13	16	0	25	--	--	4.50	1.34	1.31	10	--	17.1	12	----	---								
Parkersburg (U)	615	------	------	40	25	32.7	-2.8	64	10	8	15	0	26	--	--	4.04	1.29	1.32	14	1	16.6	10	7.6	---	26	NW	19	[illegible]	[illegible]	21	8.3	20

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
WISCONSIN																																
Green Bay	689	993.6	1017.4	28	13	20.4	3.1	42	8	-4	24	0	29	17	83	0.48	-0.93	-0.25	9	0	6.6	4	13.6	NE	43	NW	[illegible]	5	10	14	6.8	39
La Crosse	652	992.6	1018.6	29	14	21.6	2.3	44	16	0	19	0	29	14	68	.38	-.77	.27	5	0	4.4	4	11.0	NW	*36	WNW	8	7	8	14	6.5	--
Madison	857	980.4	1017.5	27	12	19.7	-2.2	44	8	-8	13	0	29	14	76	1.14	-.04	.61	8	0	12.3	9	11.1	WNW	38	NE	10	7	2	20	7.0	43
Milwaukee	672	991.2	1017.3	29	18	23.4	-.8	40	8	5	12	0	29	19	79	3.05	1.73	1.67	16	0	34.0	22	15.8	WNW	58	NE	10	7	3	19	7.3	40
WYOMING																																
Casper	5319	833.4	1017.7	29	8	18.5	-7.4	44	8	-19	27	0	29	11	71	.85	.10	.35	13	0	11.9	3	13.6	SW	*38	WSW	15	7	2	20	7.2	--
Cheyenne	6131	806.0	1017.0	29	11	19.9	-7.8	49	7	-19	28	0	29	11	69	.49	-.19	.13	12	0	8.8	3	15.7	WNW	49	NW	9	1	9	19	7.9	44
Lander	5563	831.7	1018.2	31	7	19.2	-3.7	48	7	-16	28+	0	29	[illegible]	64	.53	-.11	.15	7	0	9.7	7	5.5	ⓘSW	32	W	21	8	7	14	6.3	68
Sheridan	3942	883.2	1019.9	30	10	20.0	-3.2	56	7	-18	27	0	29	14	75	.54	-.10	.23	9	0	10.2	5	7.7	WNW	47	NW	16	5	5	19	7.2	56

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

ⓘ Wind direction to 8 compass points only.

¢ City Office Data.

† Airport Data.

‡ Peak Gust.

HEATING DEGREE DAYS

(Base 65°F.)

FEBRUARY 1960

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	613	2287	2244
Mobile	450	1654	1343
Montgomery	500	1916	1769
ALASKA			
Anchorage	1223	7470	7718
Annette	747	4638	4773
Barrow	2129	14067	13196
Barter Island	2141	14199	
Bethel	1520	9378	8928
Cold Bay	1009	6272	
Cordova	913	6297	6519
Fairbanks	1798	10497	10600
Juneau	911	5893	6225
King Salmon	1215	7605	
Kotzebue	1832	11144	10802
McGrath	1752	10510	10472
Nome	1559	9864	9468
St. Paul	1112	6836	6907
Yakutat	906	5953	6301
ARIZONA			
Flagstaff	1130	5140	5212
Phoenix (U)	355	1235	1255
Phoenix	388	1381	1428
Prescott	805	3439	3358
Tucson	493	1699	1453
Winslow	807	3758	3610
Yuma	195	838	849
ARKANSAS			
Ft. Smith	796	2917	2619
Little Rock	723	2667	2441
Texarkana	656	2346	1954
CALIFORNIA			
Bakersfield	372	1587	1730
Bishop	707	3171	3179
Blue Canyon	827	3285	3708
Burbank	292	1013	1284
Eureka (U)	476	2982	3050
Fresno	443	1922	2040
Los Angeles (U)	224	713	1023
Los Angeles	272	846	1380
Mt. Shasta (R)	813	3868	4111
Oakland	373	1736	2190
Red Bluff	434	1881	1982
Sacramento (U)	382	1732	1997
Sacramento	404	1907	2142
Sandberg (R)	717	2888	2862
San Diego	228	721	1060
San Francisco (U)	305	1612	2045
San Francisco	385	1710	2288
San Jose (U)	335	1452	1690
Santa Maria	391	1670	1936
COLORADO			
Alamosa	1533	6630	6288
Colorado Springs	1247	5008	4443
Denver	1159	4716	4413
Grand Junction	1026	4541	4488
Pueblo	1166	4761	4248
CONNECTICUT			
Bridgeport	868	3731	4177
Hartford	919	4416	4508
New Haven	871	3875	4281
DELAWARE			
Wilmington	840	3498	3700
DIST. OF COLUMBIA			
Washington (U)	765	3105	3258
Washington	766	3062	3304
FLORIDA			
Apalachicola (U)	356	1226	1090
Daytona Beach	216	640	720
Fort Myers	122	378	345
Jacksonville	294	1088	1051
Key West	23	88	70
Miama	55	196	166
Miami Beach	32	116	114
Orlando	171	569	558
Pensacola (U)	403	1432	1187
Tallahassee	374	1364	1278
Tampa	164	537	572
West Palm Beach	80	261	215
GEORGIA			
Athens	644	2496	2253
Atlanta	611	2347	2269
Augusta	546	2080	1768
Columbus	519	1991	1951
Macon	499	1908	1712
Rome	686	2668	2516
Savannah	441	1668	1429
IDAHO			
Boise	905	5324	4377
Lewiston	821	4474	4122
Pocatello	1235	5543	5082
ILLINOIS			
Cairo (U)	826	2988	3004
Chicago	1132	4574	4648
Moline	1229	4942	4805
Peoria	1183	4726	4591
ILLINOIS (Cont'd.)			
Springfield	1114	4327	4317
INDIANA			
Evansville	932	3621	3424
Ft. Wayne	1115	4564	4618
Indianapolis	1064	4282	4201
South Bend	1150	4712	4775
IOWA			
Burlington	1208	4822	4601
Des Moines	1316	5269	4894
Dubuque	1313	5594	5402
Sioux City	1431	5641	5326
KANSAS			
Concordia (U)	1176	4564	4091
Dodge City	1150	4319	3867
Goodland	1302	5060	4650
Topeka	1113	4365	4037
Wichita	1048	3934	3564
KENTUCKY			
Lexington	980	3635	3746
Louisville	897	3392	3444
LOUISIANA			
Baton Rouge	485	1604	1332
Lake Charles	486	1617	1293
New Orleans (U)	366	1274	993
New Orleans	440	1411	1096
Shreveport	608	2172	1784
MAINE			
Caribou	1213	6422	7209
Greenville (U)	1236	6246	
Portland	1040	4931	5438
MARYLAND			
Baltimore (U)	779	3082	3193
Baltimore	830	3433	3613
Frederick	898	3792	3707
MASSACHUSETTS			
Blue Hill Obs. (R)	943	4378	
Boston	855	3803	4130
Nantucket	848	3658	4047
Pittsfield	1102	5094	5503
MICHIGAN			
Alpena	1319	5782	5583
Detroit	1081	4469	4608
Detroit(Willow Run)	1084	4559	4703
Escanaba (U)	1252	5735	6013
Grand Rapids	1157	4875	5081
Lansing	1212	5021	
Marquette (U)	1253	5810	5893
Muskegon	1148	4869	4970
St. Ste. Marie	1379	6339	6604
MINNESOTA			
Duluth	1488	7039	7112
Internat. Falls	1569	7628	7763
Minneapolis	1364	5880	5867
Rochester	1333	5905	6032
St. Cloud	1499	6590	6612
MISSISSIPPI			
Jackson	620	2207	1822
Meridian	598	2214	1930
Vicksburg (U)	579	2093	1656
MISSOURI			
Columbia	1062	4108	3940
Kansas City	1056	3970	3811
St. Joseph	1142	4489	4153
St. Louis (U)	969	3664	3478
St. Louis	985	3812	3642
Springfield	968	3781	3632
MONTANA			
Billings	1145	5229	5161
Glasgow	1507	6795	6549
Great Falls	1187	5457	5401
Havre (U)	1329	6056	6102
Helena	1192	6158	5983
Kalispell	1321	6753	5840
Miles City	1353	5965	5841
Missoula	1135	6087	5784
NEBRASKA			
Grand Island	1341	5351	4805
Lincoln (U)	1292	4963	4490
Norfolk	1446	5762	5320
North Platte	1310	5543	4868
Omaha	1319	5223	4733
Scottsbluff	1174	5275	4955
Valentine	1451	5864	5191
NEVADA			
Elko	1098	5549	5266
Ely	1200	5716	5265
Las Vegas	544	2204	2045
Reno	832	4539	4278
Tonopah	906	4036	4183
Winnemucca	961	5087	4619
NEW HAMPSHIRE			
Concord	1032	4893	5525
NEW HAMPSHIRE (Cont'd			
Mt. Washington Obs.	1603	8673	
NEW JERSEY			
Atlantic City (U)	800	3218	3331
Newark	827	3449	3883
Trenton (U)	828	3497	3760
NEW MEXICO			
Albuquerque	819	3437	3441
Clayton	1072	4249	3781
Roswell	716	3345	2768
NEW YORK			
Albany	1067	4817	5080
Binghamton	1120	4847	5408
Buffalo	1088	446[illegible]	4823
New York (U)	843	3468	3670
New York	817	3363	3631
Rochester	1122	4760	4913
Schenectady	1017	4546	5172
Syracuse	1096	4680	4711
NORTH CAROLINA			
Asheville (U)	818	3181	3105
Cape Hatteras (R)	521	1839	1802
Charlotte	644	2545	2555
Greensboro	756	3040	2991
Raleigh	704	2777	2649
Wilmington	534	2032	1865
Winston-Salem	737	2934	2921
NORTH DAKOTA			
Bismarck	1460	6620	6718
Devils Lake (U)	1648	7532	7345
Fargo	1550	6834	6917
Grand Forks	1649	7318	
Pembina	1592	7345	
Williston (U)	1511	6736	6713
OHIO			
Akron	1083	4446	4497
Cincinnati(U)	964	3614	3465
Cincinnati	989	3822	3899
Cleveland	1023	4149	4332
Columbus	1043	4027	4179
Dayton	1054	4189	4163
Sandusky (U)	1059	4252	4235
Toledo	1078	4641	4629
Youngstown	1085	4506	4467
OKLAHOMA			
Oklahoma City	877	3271	2932
Tulsa	864	3138	2882
OREGON			
Astoria	611	3549	3346
Burns (U)	1077	5298	5049
Eugene	648	3371	3394
Meacham	1103	5598	5356
Medford	653	3444	3338
Pendleton	748	4275	3956
Portland (U)	588	3057	3012
Portland	653	3529	3331
Roseburg	621	3234	
Salem	673	3474	3262
Sexton Summit (R)	901	4373	4079
PENNSYLVANIA			
Allentown	921	3977	4356
Harrisburg	855	3763	3943
Philadelphia (U)	771	3185	3394
Philadelphia	850	3478	3656
Pittsburgh (U)	934	3652	3761
Pittsburgh	1045	4251	4370
Reading (U)	846	3560	3790
Scranton	1024	4425	4441
Williamsport	941	4173	4387
RHODE ISLAND			
Block Island	844	3604	3944
Providence	861	4014	4365
SOUTH CAROLINA			
Charleston (U)	445	1592	1466
Charleston	474	1739	1629
Columbia	557	2159	2012
Florence	554	2071	2090
Greenville	646	2562	2425
Spartanburg	653	2577	2430
SOUTH DAKOTA			
Huron	1545	6323	5923
Pierre	1485	6078	
Rapid City	1325	5546	5370
Sioux Falls	1469	6153	5911
TENNESSEE			
Bristol	815	3235	3203
Chattanooga	748	2793	2693
Knoxville	758	2892	2844
Memphis	691	2664	2547
Nashville	845	3045	2786
TEXAS			
Abilene	642	2445	2200
Amarillo	965	3784	3362
Austin	495	1766	1452
Brownsville	159	611	543
TEXAS (Cont'd.)			
Corpus Christi	286	1033	887
Dallas	637	2221	1909
Del Rio (U)	375	1517	
El Paso	534	2270	2201
Ft. Worth	639	2270	1958
Galveston (U)	400	1295	1005
Galveston	409	1369	1029
Houston (U)	427	1401	1083
Houston	441	1479	1168
Laredo	249	942	710
Lubbock	833	3237	2869
Midland	643	2518	
Port Arthur	461	1588	1267
San Angelo	580	2258	1788
San Antonio	433	1637	1355
Victoria	378	1317	969
Waco	562	2020	1696
Wichita Falls	732	2712	2475
UTAH			
Milford	1026	4964	4783
Salt Lake City	1049	4811	4358
VERMONT			
Burlington	1169	5478	5698
VIRGINIA			
Lynchburg	809	3232	3193
Norfolk	679	2580	2630
Richmond	737	3044	3068
Roanoke	819	3250	3194
WASHINGTON			
Olympia	711	3946	3822
Seattle (U)	581	3043	3131
Seattle-Tacoma	684	3633	3700
Spokane	990	5505	4981
Stampede Pass (R)	1135	6560	6175
Tatoosh Island (R)	595	3729	3803
Walla Walla (U)	719	4039	3737
Yakima	860	4805	4519
WEST VIRGINIA			
Charleston	892	3424	3357
Huntington (U)	871	3282	3162
Parkersburg (U)	930	3625	3599
WISCONSIN			
Green Bay	1286	5805	5977
La Crosse	1250	5543	5739
Madison	1305	5544	5476
Milwaukee	1200	5176	5141
WYOMING			
Casper	1342	5753	5440
Cheyenne	1301	5456	5181
Lander	1324	6068	6012
Sheridan	1301	5845	5675

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

FEBRUARY 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				∅ ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alabama										1	1	5	0					1	25	5	0								
Arkansas	3	2	0	12	5					0	0	4	0																
California										0	3	5	0													6	3	6	3
Colorado																		0	0	3	0								
Connecticut										0	0	5	0													5	A	5	0
Florida	6	3	0	2	5					0	0	3	0																
Georgia										0	0	5	0									0	0	4	0				
Illinois	3	1	0	3	5					0	0	D	0	0	0	D	0	0	U	D	0	0	U	D	0				
Indiana																		0	0	4	0								
Iowa																				4									
Kansas																		2	20	0	0								
Kentucky												4																	
Louisiana	3	2	0	8	5					0	0	4	0					0	0	4	0								
Maine										0	1	6	0					0	0	5	0					0	0	4	0
Maryland										0	0	5	0																
Massachusetts										0	0	6	0					0	0	5	0					0	0	5	0
Mississippi	2	1	0	0	4	0	0	4	0									0	0	4	0								
Missouri	1	1			4						1	4																	
Nebraska																						0	0	4	0				
Nevada										0	2	5	0																
New Hampshire										0	0	5	0					0	0	5	0								
New Jersey										0	0	5	0					2	0	0	0	7	*50	4	0				
New Mexico										0	0	5	0																
New York																		49		6								4	
North Carolina	4	1	0	0	5																	3	M	6	0				
Oklahoma	3	2	0	0	3					0	3	5	0	0	0	4	0	0	0	2	0								
Oregon										0	4	6	2	0	0	3	1									0	0	4	2
Pennsylvania											5	5				5		6	14	5									
Rhode Island																												4	
South Carolina										0	0	4	0																
South Dakota																							3	4					
Tennessee										0	1	3	0					2	U	U	0								
Texas	1	1	0	3	4					2	6	5	0																
Utah												5																	
Virginia	2	2	0	0	4																								
Washington										0	0	5	0																
West Virginia												4								4									
Wisconsin																		0	0	5	0								

* Approximate.
A Several.
D Damage occurred; reasonable estimates not available.
M Many; mostly minor.
U Unknown.
‡ Includes heavy sleet storm.
# Freezing drizzle and freezing rain, commonly known as glaze.
∅ For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

FEBRUARY 1960

The most significant flooding during February occurred in the Eel River Basin in California. It was the fourth highest flood of record and the first major rise in the Eel Basin since December 1955. Flooding reported elsewhere in the United States was mostly light.

ST. LAWRENCE DRAINAGE

Lake Erie.--Minor flooding occurred on the St. Marys and Maumee Rivers in Indiana and on the St. Joseph River at Montpelier, Ohio, between the 10th and 13th. Some inconvenience resulted to city projects along the Maumee River within the city of Ft. Wayne. No other damage was reported.

Lake Ontario.--No damage resulted from the minor flooding on Oatka Creek at Garbutt, N. Y., on the 11th and 12th and on Black Creek at Churchville, N. Y., on the 12th and 13th.

ATLANTIC SLOPE DRAINAGE

The Neponset River at Norwood, Mass., rose above flood stage twice during the latter half of February. The first period of minor flooding was due to heavy rain which averaged about 1.5 inches during the early morning hours of the 19th. The second period of minor flooding was due to heavy rain on the morning of the 26th. Flooding in both cases was confined to inundation of lowlands with no flooding in the lower portion. No damage resulted.

The flooding on the Mohawk River at Schenectady, N. Y., between the 11th and 13th was due to an extensive ice jam -- about 3.5 miles long. Minor flooding occurred on Schoharie Creek at Middleburg, N. Y., on the 11th and 12th due to rain and snowmelt runoff.

No damage resulted from the flooding on the Chenango, Chemung, and Susquehanna Rivers in New York on the 11th and 12th. The temperature was near record high levels (in the lower and middle fifties) causing the snow cover with estimated water content of 1.5 inches in the Susquehanna and about 1 inch in the Chemung to melt rapidly. There was no report of damage due to overflow of rivers.

The James River and tributaries below Lynchburg, Va., rose sharply to near flood stage on the 19th and 20th, with crests slightly above flood stage at Palmyra, Va., on the Rivanna and at Columbia and Richmond on the James. No significant rises occurred at Lynchburg, Va., or above. Stages remained at or above flood stage from about 6 hours at Palmyra to near 24 hours at Richmond's Western Station.

Moderate to heavy rains at the end of January and frequently in February kept streams in eastern North Carolina at high levels. Several points along the Neuse, Tar, and Cape Fear Rivers remained in flood the entire month on all but a few days. This was the most extended period of flood conditions on record in eastern North Carolina, but there was no serious flooding at any time. There was little loss to agriculture as the soil condition was such as to prevent preparatory farmwork even above the flooded areas. A few lowlying, low cost homes in the vicinity of Goldsboro and Kinston were evacuated during the period of highest water.

Very heavy rainfall of 2 to 3.5 inches the last 3 days of January produced some major flooding along the Rocky and Pee Dee Rivers in South Carolina. Runoff from this rainfall was later aggravated by additional heavy rains, causing almost incessant flooding throughout February. This flood was followed by four other floods spaced 3 to 5 days apart of lesser magnitude. The Lynches River at Effingham, S. C., which floods very infrequently rose above flood stage three times during the month. All the floods were shallow, except the flood on the 20th was the highest since September 1952. The Black River at Kingstree, S. C., stayed near or slightly above flood stage all month. The Waccamaw River at Conway, S. C., rose rather steadily after February 9 to crest just at flood stage the last 3 days. The North Fork of the Edisto at Orangeburg, S. C., was in shallow flood the entire month. It is estimated that the main stem of the Edisto near Givhans, S. C., reached a stage of 14 feet (flood stage 10 feet) which nearly equalled the stage of 14.1 feet reached last November, the highest stage since September 1949. No damage resulted from the flooding on the Yadkin River. Minor damage occurred to secondary roads, bridges, and crops in the lowlands in the Rocky River Basin from the excessive flooding. Considerable loss was reported in the Cheraw, S. C., area on the Pee Dee River. No damage was reported along the Lynches, Black, Waccamaw, and North Fork of the Edisto. A few people along the main stem of the Edisto were forced to evacuate their homes due to inaccessible roads and most all camp sites were abandoned.

Light to moderate flooding occurred on the middle reaches of the Saluda River at Pelzer and Chappels, S. C., on three different occasions during the month. Flooding on the upper Broak River was light, while in the middle reaches there was considerable flooding. Moderate to heavy lowland flooding occurred on the Catawba from Columbia to Lake Marion, S. C., throughout the month. Prolonged moderate lowland flooding occurred on the Wateree River at Camden, S. C., on three different periods. There was considerable loss in pasturage and to the lumber industry from Columbia to the coast. There was some livestock loss, but most stock was removed from the danger area.

The flooding on streams in Georgia was due to moderate to heavy rain on the 4th, 5th, 10th, 12th, and 13th. Except for minor nuisance costs, no damage is known to have occurred.

EAST GULF OF MEXICO DRAINAGE

The Apalachicola River was above flood stage, all but 1 day during February at Blountstown, Fla. The ground was well soaked at the beginning of the month due to heavy to excessive rains in the closing days of January. The ground was kept rather wet during February due to moderate to heavy rains on the 4th, 5th, 10th, 11th, 13th, 14th, 18th, 22d, and 25th. The rainfalls in these periods were mostly 1 to 1.5 inches or less. The heaviest rains occurred on the 13th and 14th when 1 to 2 inches fell in the upper streams and 2 to 4 inches in the lower streams. No damages resulted since only wooded areas were affected.

Heavy rains near the end of January caused minor flooding in the upper reaches of the Tombigbee in Mississippi and Alabama late in January and early in February. Crests were not reached on the lower Tombigbee until early February. Minor rises occurred again from rains averaging slightly over an inch on the 21st and 22d. Only minor damage has been reported as a result of these overflows.

The Pearl River was in flood at Jackson, Miss., and Bogalusa, La., all of February. At Pearl River, La., the river was in flood all but 3 or 4 days. Substantial lowland flooding occurred at Jackson, Miss., where flood stage was exceeded by 10 feet. Damages were limited to loss of business, labor in the woodlands, and grazing in the lowlands of flooded areas.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--The mean stage of the Mississippi River at Minneapolis, Minn., was 1.0 foot below the long-term mean. This is the 8th consecutive month of a below long-term mean. At La Crosse, Wis., the mean stage of 4.7 feet was 1.3 feet below the long-term mean while at St. Paul, Minn., the mean stage was slightly above normal.

The moisture content of the snow on the ground in the upper St. Croix, Chippewa, and Wisconsin drainage ranges from 2 to 3.5 inches and is greater than a year ago. Elsewhere in the area above Guttenberg, Iowa, the range is from 0.5 to 1 inch and is considerably less than last year.

A comparison of snow depths in the Upper Mississippi Basin in Minnesota and Wisconsin on February 29 with that of other years is given in the following table:

COMPARATIVE SNOW DEPTHS (INCHES)

Station	1960	1959	1958	1957	1956	1955
(Minnesota)						
Bemidji	5	4	T	14	22	25
Alexandria	4	1	0	4	12	10
New Ulm	T	T	0	0	6	7
Minneapolis	2	0	0	T	7	6
Rochester	3	13	0	T	6	1
(Wisconsin)						
Park Falls	17	10	3	16	20	--
Wausaw	5	9	0	1	7	--
Portage	4	10	T	0	T	--

The Rock River at Moline, Ill., was still above flood stage at the beginning of the month due to an ice gorge which had formed below the gage on January 24. The ice gorge held through February, keeping the river above flood stage at Moline until February 7.

An ice gorge formed in the Fox River below the gage at Dayton, Ill., and produced a stage at Dayton more than 6 feet above flood stage. However, this was 18 feet below the January crest and little additional damage occurred. The upper Illinois River rose several feet around the middle of the month and was reported out of banks at La Salle, Ill., from the 11th to the 13th. On the 18th, a crest of almost 1 foot above flood stage occurred at Meredosia, Ill., on the lower Illinois.

Missouri Basin.--A minor overflow occurred on Red Willow Creek at Red Willow, Nebr., in the upper Republican basin due to an ice gorge on the 4th. Damages were negligible.

Monthly precipitation totals were generally 1 to 2 inches above normal and more than four times normal in southwestern Nebraska. This month was the second wettest February of record in northwest and north-central Kansas. Precipitation for the January to February period was the greatest of record in north-central, northwest, and west-central divisions of Kansas. Snow cover at the end of the month was generally 8 to 15 inches. Runoff was retarded by temperature averages near low record levels.

Ohio Basin.--Minor flooding occurred in local areas along the Scioto and tributaries in Ohio between February 11 and 13 due to moderate to heavy rain on the 10th. No damage was reported.

Rainfall totalling more than 2 inches from the 6th to the 11th caused the Wabash River in Indiana to rise as much as 5 to 7 feet above flood stage at some points. In other reaches, the Wabash remained below flood stage. The White River also rose 1 to 4 feet above flood stage at some points. A few secondary roads were closed, and some winter wheat was inundated. No residential areas were flooded. Damage was at a minimum because of the season of the year and the overflow was mostly over uncropped bottom lands.

Flooding along the main stem of the Ohio was confined to the reach immediately below the Wabash River. No damage was reported.

Lower Mississippi Basin.--The Big Black River at Pickens, Miss., rose above flood stage on the 2d of the month from rains of from 1 to 2 inches during the last week of January. Additional rain of 2 to 2.5 inches on the 4th and 5th caused the river to rise 2.5 feet above flood stage at Pickens and nearly 6 feet above flood stage at Bovina, Miss. Considerable flooding of lowlands occurred along all reaches of the river but only farmlands were affected. The principal loss occurred to pastures.

WEST GULF OF MEXICO DRAINAGE

The light flooding on the Calcasieu River at Hineston, La., between the 7th and 9th was due to generally heavy rains on the 3d. Further down stream, bankfull stage was reached at Kinder, La. Flood stage was exceeded in the headwaters of the Sabine River at Mineola, Tex., between the 5th and 12th and in the lower portion at Deweyville, Tex., between the 6th and 9th. Melting snow caused a slow rise in the upper Calcasieu beginning on the 14th. Snow cover on the morning of the 13th ranged from 3 inches near the coast to about 12 inches in the northern portion. Rains ranged from 0.25 inch to slightly over 1 inch on the 15th with the same amounts occurring again on the 17th. Streams began rising in the upper and middle portions around the 16th. The Calcasieu reached flood stage again at Hineston, La., on the 18th and remained above flood stage at that point the remainder of the month. Rains averaging slightly over 1 inch occurred on the 20th and 21st, and again on the 24th. The Calcasieu continued to rise slowly in the upper portion, cresting 1.8 feet above flood stage at Hineston, La., on the 26th. Below Hineston, it reached bankfull stage at Oakdale, La., on the 21st, and crested 0.2 foot below bankfull stage at Kinder, La., on the 26th. The Sabine River rose moderately at Milan and Bon Wier, Tex., beginning on the 16th and exceeded flood stage at Bon Wier on the 27th and 28th and at Deweyville from the 24th to the end of the month. No damages resulted as flooding was confined to lowlands near the rivers.

The flooding on the Trinity River at Liberty, Tex., from the 25th to the 29th was due to heavy rains from the 21st to the 25th which averaged 2.25 inches below Riverside, Tex.

PACIFIC SLOPE DRAINAGE

Local flooding occurred along Dominguez Creek at Gardena and Torrance, Calif., and in some low-lying areas in Redona Beach and Manhattan Beach following the heavy rain during the evening of February 1. A total of 1.35 inches of rain occurred at Los Angeles International Airport between 3 p.m. and 11 p.m., with 0.86 inch occurring between 7 p.m. and 9 p.m. The overflowing channel caused some damage to streets, lawns, cars, and house foundations.

The heavy rain on the 7th and 8th caused overflow along all the fixed-sill weirs on the Sacramento River in California. This storm was preceded by a series of storms which caused moderate amounts of rain during the first 6 days of the month and overflow at the Colusa and Tisdale Weirs. Rainfall amounts from about noon on the 7th to noon on the 8th over the northern Sierra and the North Coast Range ranged from 5 to 10 inches. The snow level fluctuated between 4,000 and 6,000 feet.

Moderate flooding occurred in the southern portion of the Russian River Valley at Guerneville, Calif., between the 8th and 10th due to heavy rain beginning on the 8th. The rainfall averaged 7.5 inches over the basin with 5 inches occurring in about 24 hours. Flooding was extensive in the Guerneville area and Santa Rosa Creek basin. Minor flooding occurred in the northern portion of the Napa River Valley, especially along the small creeks in the St. Helena area. There was some damage to roads and resort buildings along the Russian River in the Guerneville area. One person was drowned when he fell into the swollen Santa Rosa Creek.

Considerable damage resulted from the flooding along the Eel River at Fernbridge, Calif., from the 8th to the 10th. About 22,000 acres of bottom land were flooded near Ferndale and Loleta, Calif. Some flooding of Highway 101 occurred upstream and about 3 feet of water was reported in the business district of Weott. Several homes had water in them varying in depth from a few inches to 3 feet. One life was lost when a workman fell from a railroad bridge he was repairing and was drowned. This flood was due to heavy rainfall on the 7th and 8th. Twenty-four hour totals averaged slightly over 4 inches with one station reporting 6 inches of rain in 6 hours. Runoff was heavy as the ground was soaked from light to moderate intermittent rain during the first 6 days of February.

Moderate rain from the 7th to the 9th caused the Coquille River to exceed flood stage at Coquille, Oreg., on the 10th and 11th. Three to 5 inches of rain occurred during this storm in low-level areas. No damage was reported.

The light flooding in streams in the Willamette Basin in Oregon was due to precipitation during the first 10 days of February, with the heaviest amounts occurring on the 8th and 9th. Most stations reported more than 1 inch on both dates. There was no loss of life or property.

A combination of rain and melting snow on the 8th produced substantial rises in the Payette River in Idaho and the Malheur River in eastern Oregon, but flooding was confined to small areas of some of the smaller tributaries. There was also some flooding along small streams in the Weiser River drainage in Idaho. Roads were damaged in a few places.

The flooding on the Snoqualmie River at Carnation, Wash., on the 7th was due to heavy rain on the 6th and 7th. No damage was reported.

FLOOD STAGE DATA

(All dates in February unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
ST. LAWRENCE DRAINAGE	Ft.			Ft.	
Lake Erie					
St. Marys: Decatur, Ind.	13	10	13	16.6	11
St. Joseph: Montpelier, Ohio	10	10	13	11.9	13
Maumee: Ft. Wayne, Ind.	15	11	13	17.5	11
Lake Ontario					
Oatka Creek: Garbutt, N. Y.	5	11	12	5.2	11
Black Creek: Churchville, N. Y.	5	12	13	5.4	13
ATLANTIC SLOPE DRAINAGE					
Neponset: Norwood, Mass.	9	19	22	9.7	20
		27	28	9.2	27
Schoharie Creek: Middleburg, N.Y.	12	11	12	13.2	11
Mohawk: Schenectady, N. Y.	10	11	13	14.8	12
Chenango: Whitney Point, N. Y.	12	11	12	13.1	11
Chemung: Chemung, N. Y.	12	11	12	12.4	11
Susquehanna: Bainbridge, N. Y.	13	12	12	13.1	12
Conklin, N. Y.	11	11	12	12.4	12
Vestal, N. Y.	18	11	12	18.5	12
Rivanna: Palmyra, Va.	15	19	19	18.3	19
James: Columbia, Va.	18	19	19	18.9	19
Richmond, Va.	12	19	20	13.2	20
Dan: Danville, Va.	11	19	19	11.2	19
Roanoke: Altavista, Va.	18	19	19	19.4	19
Randolph, Va.	21	20	20	24.1	20
Tar: Tarboro, N. C.	19	4	11	20.8	6
		15	18	20.1	17
		24	25	19.35	24
Greenville, N. C.	13	3	27	14.8	7
Neuse: Neuse, N. C.	14	1	9	16.8	7
		13	14	15.0	14
		19	23	17.7	22
Smithfield, N. C.	13	1	29	19.0	8
Goldsboro, N. C.	14	3	29	20.8	12
Kinston, N. C.	14	6	29	18.0	16
Cape Fear: Moncure, N. C.	20	6	6	20.6	6
		19	19	20.4	19
Fayetteville, N. C.	35	2	4	40.5	2
		7	9	39.3	7
		20	21	36.2	21
Lock No. 2, Elizabethtown, N.C.	20	1	25	30.2	4, 9
		27	28	21.8	28
Yadkin: Wilkesboro, N. C.	14	5	5	E15.0	5
		11	11	E15.0	11
Yadkin College, N. C.	18	6	7	20.0	7
		12	12	19.0	12
		19	20	20.0	19
Rocky: Norwood, N. C.	16	Jan. 30	2	29.3	1
		5	7	25.4	6
		11	12	20.0	11
		13	15	23.2	14
		18	20	25.3	19
Lynches: Effingham, S. C.	14	6	9	14.7	7
		12	13	14.2	12
		18	21	15.3	20
Waccamaw: Conway, S. C.	7	27	29	7.0	27-29
Pee Dee: Cheraw, S. C.	30	1	4	39.0	2
		6	9	37.5	7
		12	16	32.3	12
				35.0	14
		19	21	36.5	20
Peedee, S. C.	19	2	1/	24.9	7
				25.5	11
				24.6	18
				24.4	24-25
Black: Kingstree, S. C.	12	6	20	12.5	9
				12.5	17-18
		28	Mar. 1	12.1	29-31
Saluda: Pelzer, S. C.	6	Jan. 31	1		
		6	8	8.0	6
		13	14	6.6	14
		19	21	6.3	21
Chappells, S. C.	13	Jan. 31	1	15.9	Jan. 31
		7	8	15.6	7
		11	15	21.2	14
		22	22	14.0	22
ATLANTIC SLOPE DRAINAGE (Cont'd.)	Ft.			Ft.	
Broad: Gaffney, S. C.	10	5	6	12.3	6
Blair, S. C.	14	Jan. 30	3	21.1	1
		6	9	23.2	7
		11	16	20.5	14
		19	20	18.0	20
Congaree: Columbia, S. C.	19	14	14	19.2	14
Catawba: Catawba, N. C.	8	6	6	12.7	6
		11	11	9.6	11
		19	19	10.2	19
Wateree: Camden, S. C.	23	7	8	26.9	7
		14	16	27.0	14
		20	20	23.7	20
North Fork Edisto: Orangeburg, S. C.	8	30	1/	9.6	6
				9.3	15
				8.8	19
				8.9	27
Savannah: Carlton Bridge, Ga.	15	6	6	15.1	6
Clyo, Ga.	11	Jan. 9	1/	13.1	Jan. 18-20
				16.6	8
				17.3	18-20
				17.0	29
Ogeechee: Midville, Ga.	6	1	6	7.6	4
		14	19	7.25	17
Dover, Ga.	7	1	1/	9.2	3
				9.5	7
				9.6	18
Ocmulgee: Macon, Ga.	18	1	2	19.0	1
Abbeville, Ga.	12	6	24	14.0	8, 16
Lumber City, Ga.	15	13	19	16.2	15
Oconee: Milledgeville, Ga.	20	Jan. 31	3	25.9	Jan. 31
		14		25.4	14
Dublin, Ga.	21	16	19	22.6	17
Mount Vernon, Ga.	16	7	25	18.6	19, 20
Altamaha: Charlotte, Ga.	15	8	29	20.2	16
Satilla: Waycross, Ga.	16	20	21	16.2	20
Atkinson, Ga.	13	22	29	15.8	26
EAST GULF OF MEXICO DRAINAGE					
Apalachicola: Blountstown, Fla.	15	2	29	19.4	17
Tombigbee: Macon, Miss.	20	Jan. 30	9	25.4	1
				25.3	6
		22	26	23.8	24
Tibbie, Miss.	23	Jan. 30	3	25.0	Jan. 31
Gainesville, Ala.	36	2	7	38.0	6
Demopolis Lock and Dam, Ala.	48	1	8	51.8	3, 4
Lock 3, Whitfield, Ala.	33	Jan. 30	14	51.8	6
		22	1/	44.1	25
Lock 2, Pennington, Ala.	46	1	11	53.8	6
		26	26	46.0	26
Lock 1, Jackson, Ala.	31	2	14	36.2	8, 9, 10
Pearl: Edinburg, Miss.	20	1	7	21.3	4
Jackson, Miss.	18	Jan. 31	1/	27.95	10
Monticello, Miss.	19	5	9	20.3	6
Bogalusa, La.	15	Jan. 7		16.7	Jan. 10
				17.4	Jan. 22
				18.7	10
				18.5	23
Pearl River, La.	12	4	1/	14.2	10
				14.0	25
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Rock: Moline, Ill.	13	Jan. 24	7	14.3	Jan. 31
Fox: Dayton, Ill.	12	Jan. 20	1	E36.9	Jan. 25
		20	29	18.5	21
Illinois: La Salle, Ill.	20	11	13	20.8	12
Meredosia, Ill.	10	12	25	10.9	18
Missouri Basin					
Red Willow Creek: Red Willow, Nebr.	12	4	4	J14.7	4

FLOOD STAGE DATA

(All dates in February unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	*Ft.*			*Ft.*	
Ohio Basin					
Paint Creek: Bourneville, Ohio	10	11	11	13.9	11
Scioto: La Rue, Ohio	11	11	11	11.4	11
Circleville, Ohio	14	12	12	15.1	12
Piketon, Ohio	16	11	13	19.9	12
East Fork: Seymour, Ind.	14	12	13	14.2	13
White: Anderson, Ind.	10	10	11	11.4	11
Spencer, Ind.	14	10	14	16.6	12
Elliston, Ind.	18	8	15	21.2	13
Edwardsport, Ind.	15	9	16	18.6	14-15
Petersburg, Ind.	16	10	19	19.8	16
Hazleton, Ind.	16	--	--	19.85	16
Skillet Fork: Wayne City, Ill.	15	7	7	15.2	7
Little Wabash: Wilcox, Ill.	16	10	15	18.5	12
Carmi, Ill.	17	8	18	21.0	11
Wabash: Wabash, Ind.	12	11	13	16.85	11
Lafayette, Ind.	11	8	14	18.0	12
Covington, Ind.	15	9	16	20.85	14
Montezuma, Ind.	14	8	17	19.05	15
Terre Haute, Ind.	14	10	17	16.5	16
Mt. Carmel, Ill.	17	14	19	18.2	18
Ohio: Shawneetown, Ill.	33	15	19	34.2	18
Dam 50, Fords Ferry, Ky.	34	15	21	36.0	18
Lower Mississippi Basin					
Big Black: Pickens, Miss.	16	2	14	18.5	5
Bovina, Miss.	28	8	20	33.8	12

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
WEST GULF OF MEXICO DRAINAGE	*Ft*			*Ft*	
Calcasieu: Hineston, La.	12	7 18	9 1/	12.4 13.8	8 26
Sabine: Mineola, Tex.	14	5	12	17.0	10
Bon Wier, Tex.	17	27	28	17.1	28
Deweyville, Tex.	14	6 24	9 1	14.0 14.5	9 29
Trinity: Liberty, Tex.	24	25	29	26.0	26
PACIFIC SLOPE DRAINAGE					
Sacramento: Moulton Weir, Calif.	77	8	10	79.5	9
Colusa Weir, Calif.	62	2 8	4 12	62.1 66.5	3 10
Tisdale Weir, Calif.	44	2 8	4 14	47.2 48.6	3 10
Fremont Weir, Calif.	33	9	14	36.3	9
Russian: Guerneville, Calif.	29	8	10	38.0	8
Eel: Fernbridge, Calif.	17	8	10	24.85	8
Coquille: Coquille, Oreg.	21	10	11	21.9	10
Marys: Philomath, Oreg.	20	9	9	20.2	9
Santiam: Jefferson, Oreg.	13	9	9	13.4	9
South Yamhill: Willamina, Oreg.	8	9	9	8.3	9
Whiteson, Oreg.	38	9	11	40.7	10
Pudding: Aurora, Oreg.	15	9	12	15.8	10
Tualatin: Dilley, Oreg.	12	7	10	12.7	10
Farmington, Oreg.	29	9	14	31.8	11
Snoqualmie: Carnation, Wash.	51	7	7	52.0	7-8

* Tentative
1/ Continued at end of month
E Estimated
J Due to ice jam

RAWINSONDE DATA

Average monthly values

FEBRUARY 1960

ALBANY, N. Y. (1000 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	86	- 4.2	[illegible]	282	5.4
1,000	29	87			287	6.2
950	29	492	- 4.6	74	294	8.5
900	29	917	- 5.9	73	296	10.3
850	29	1,364	- 6.7	70	288	11.7
800	29	1,836	- 8.4	72	284	12.6
750	29	2,337	- 9.8	69	275	14.2
700	29	2,867	-11.6	59	274	19.6
650	29	3,433	-14.1	54	270	23.3
600	29	4,037	-17.2	53	268	28.8
550	29	4,683	-20.9	43	270	32.8
500	29	5,383	-25.4	42	269	39.1
450	29	6,134	-30.7	41	269	40.6
400	29	6.966	-37.1		264	44.5
350	29	7,879	-42.6		262	48.6
300	29	8,908	-47.6		261	54.8
250	29	10,103	-51.4		259	51.7
200	29	11,549	-52.2		261	52.7
175	29	12,415	-51.4		261	51.5
150	29	13,418	-51.5		266	50.1
125	29	14,598	-53.8		267	46.0
100	29	16,022	-56.5		262	[illegible]
80	29	17,433	-57.4		264	32.6
60	29	19,254	-56.5		264	23.3
50	29	20,410	-56.4		269	20.0
40	29	21,827	-55.6		277	17.7
30	28	23,660	-55.3		272	14.6
25	28	24,827	-54.1		276	15.9
20	28	26,261	-52.9		280	17.3
15	27	28,123	-51.7		281	24.5
10	25	30,752	-48.7		276	40.0
7	18	33,124	-44.9		277	39.8
5	5	35,448	-42.1			

ALBUQUERQUE, N. MEX. (835 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	1,619	- 1.4	56	13	1.4
1,000	29	[illegible]				
950	29	569				
900	29	1,013				
850	29	1,473				
800	29	1,958	- 1.4	51	307	4.9
750	29	2,468	- 4.6	51	296	9.7
700	29	3,010	- 8.0	55	297	14.0
650	29	3,580	-11.3	56	294	21.0
600	29	4,194	-14.4	53	292	27.0
550	29	4,843	-18.4	46	299	24.3
500	29	5,554	-23.3	39	311	22.7
450	29	6,312	-28.6		313	22.3
400	29	7,153	-34.7		309	24.1
350	29	8,074	-40.8		295	29.0
300	29	9,108	-47.1			
250	29	10,298	-53.4			
200	28	11,719	-55.4			
175	27	12,564	-55.7			
150	25	13,550	-55.8			
125	24	14,702	-58.6			
100	23	16,097	-62.1			
80	19	17,481	-62.3			
60	18	19,252	-61.5			
50	18	20,386	-59.5			
40	15	21,798	-58.0			
30	14	23,622	-56.0			
25	13	24,782	-54.9			
20	9	26,212	-53.2			
15	5	28,093	-50.5			

AMARILLO, TEX. (889 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	1,095	- 3.6	78	352	2.7
1,000	28	153				
950	28	565				
900	28	998				
850	28	1,451	- 2.1	60	323	6.2
800	28	1,934	- 2.0	54	310	11.5
750	28	2,442	- 3.5	51	302	15.5
700	28	2,989	- 6.6	47	292	15.9
650	28	3,558	-10.4	45	284	19.6
600	28	4,177	-14.1	42	286	24.1
550	28	4,828	-18.0	41	285	27.6
500	28	5,540	-22.2		281	30.5
450	28	6,300	-27.5		280	35.2
400	28	7,145	-33.8		280	35.9
350	28	8,068	-40.7		277	37.5
300	28	9,101	-47.7		274	43.3
250	27	10,287	-53.3		272	54.6
200	27	11,714	-55.6		270	63.5
175	27	12,565	-55.4		271	63.1
150	26	13,544	-55.3		270	63.1
125	25	14,701	-57.8		271	56.3
100	25	16,098	-60.8		272	43.3
80	22	17,488	-61.8		271	33.4
60	21	19,276	-61.1		273	18.8
50	19	20,410	-59.8		267	12.6
40	16	21,818	-57.6		266	11.5
30	14	23,641	-56.0		255	8.9
25	8	24,820	-55.6			
20	6	26,268	-53.6			

ANCHORAGE, ALASKA (1006 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	30	- 5.4	84	26	1.7
1,000	29	72			32	3.9
950	29	479	- 1.5	67	54	4.5
900	29	908	- 2.6	61	102	5.1
850	29	1,360	- 5.2	63	118	8.5
800	29	1,834	- 7.5	61	137	12.2
750	29	2,327	-10.5	60	147	14.6
700	29	2,862	-13.8	59	159	12.2
650	29	3,413	-16.9	55	163	11.9
600	29	4,018	-20.6	54	174	11.3
550	29	4,649	-25.0	51	180	12.4
500	29	5,344	-30.1	50	189	13.6
450	29	6,077	-35.6	52	197	16.1
400	29	6,895	-41.4		195	18.7
350	28	7,793	-47.6		195	22.7
300	28	8,798	-53.6		197	18.5
250	28	9,962	-56.6		195	21.4
200	28	11,384	-53.9		203	18.5
175	28	12,246	-51.7		211	18.5
150	28	13,248	-50.5		210	15.7
125	28	14,438	-50.1		213	15.3
100	27	15,885	-50.5		215	15.0
80	26	17,345	-50.7		226	11.1
60	25	19,220	-50.9		226	9.7
50	25	20,408	-50.9		239	9.3
40	22	21,883	-51.8		234	7.0
30	17	23,763	-52.4		259	4.3
25	15	24,956	-52.4		318	9.1
20	10	26,497	-51.4			
15	7	28,399	-51.6			

ANNETTE, ALASKA (1010 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	37	2.9	79	116	8.9
1,000	28	113			30	3.3
950	28	525	1.1	69	88	2.5
900	28	961	- 1.1	65	143	3.3
850	27	1,421	- 3.6	63	175	2.9
800	27	1,899	- 6.0	59	215	3.7
750	27	2,401	- 8.3	54	272	5.8
700	27	2,936	-11.3	49	316	9.7
650	27	3,497	-14.3	46	309	11.5
600	27	4,105	-17.8	46	307	15.5
550	27	4,743	-22.1	48	303	16.9
500	27	5,446	-26.7	49	297	19.0
450	27	6,192	-32.1	46	294	12.6
400	27	7,022	-38.5		302	10.9
350	27	7,927	-45.5		289	9.5
300	26	8,946	-52.1		282	12.8
250	26	10,112	-57.7		296	19.6
200	24	11,525	-57.0			
175	24	12,375	-54.8			
150	24	13,365	-52.9			
125	24	14,543	-52.6			
100	23	15,988	-53.5			
80	23	17,421	-54.4			
60	22	19,267	-55.1			
50	22	20,433	-55.0			
40	21	21,860	-55.7			
30	18	23,694	-56.3			
25	16	24,862	-56.9			
20	14	26,261	-58.3			
15	12	28,075	-59.6			

ATHENS, GA (987 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	246	1.8	84	325	3.7
1,000	28	134				
950	28	555	3.4	62	335	3.9
900	28	990	3.4	53	274	5.8
850	28	1,453	3.0	45	267	13.4
800	28	1,942	1.1	46	259	19.6
750	28	[illegible]	- .9	47	256	25.3
700	28	3,009	- 2.8	42	258	32.4
650	28	3,585	- 6.1	44	259	37.5
600	28	4,216	- 9.5	44	259	48.6
550	28	4,876	-13.5	43	252	49.5
500	28	5,604	-17.4		254	59.3
450	28	6,380	-22.5		251	67.0
400	28	7,241	-28.4		254	69.4
350	28	8,185	-35.3		253	78.1
300	28	9,242	-42.8		254	87.2
250	28	10,453	-49.3		254	107.1
200	27	11,894	-54.5		255	108.8
175	27	12,747	-55.7		256	107.4
150	27	13,722	-58.8		257	93.8
125	25	14,861	-62.6		255	81.4
100	25	16,223	-66.5		253	61.4
80	25	17,571	-66.7		258	47.8
60	25	19,329	-62.5		252	24.3
50	25	20,462	-59.6		261	14.2
40	25	21,867	-57.3		[illegible]	11.5
30	20	23,695	-54.2		269	5.6
25	19	24,871	-52.2		253	6.4
20	18	26,318	-50.0		276	6.6
15	15	28,218	-47.1			
10	9	30,939	-42.6			

BARROW, ALASKA (1018 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	8	-22.6	62	110	14.0
1,000	29	140	-19.0	54	103	14.0
950	29	530	-15.6	52	100	17.9
900	29	935	-13.4	49	103	16.7
850	29	1,371	-12.5	48	103	12.4
800	29	1,833	-13.4	47	102	8.9
750	29	2,324	-15.2	46	125	5.8
700	29	2,842	-17.9	46	139	3.7
650	29	3,390	-21.2	43	153	3.7
600	29	3,979	-24.9	39	154	3.9
550	29	4,603	-29.1	37	172	7.2
500	29	5,282	-33.8		180	8.5
450	29	6,011	-39.1		176	8.0
400	29	6,812	-44.7		191	8.2
350	29	7,696	-49.8		205	10.3
300	29	8,693	-54.2		219	13.4
250	29	9,859	-55.3		222	15.7
200	29	11,286	-53.8		225	15.7
175	29	12,146	-52.5		223	16.1
150	26	13,137	-51.1		222	15.7
125	25	14,323	-51.2		231	17.9
100	25	15,775	-51.2		239	16.1
80	24	17,220	-52.0		241	19.4
60	23	19,079	-53.1		246	20.0
50	19	20,265	-53.0		246	22.7
40	17	21,737	-54.0		252	23.3
30	15	23,562	-56.2		257	26.8
25	14	24,712	-57.0		257	25.6
20	13	26,138	-57.5			
15	9	27,941	-58.4			

BARTER IS., ALASKA (1019 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	15	-23.1	70	98	4.7
1,000	28	153	-19.2	64	93	7.0
950	28	538	-13.2	58	104	8.4
900	28	945	-12.5	52	113	6.0
850	28	1,384	-11.2	53	124	4.7
800	28	1,849	-11.8	50	150	4.3
750	28	2,333	-14.1	51	190	3.3
700	28	2,861	-17.0	49	220	2.9
650	28	3,407	-20.5	48	247	4.1
600	28	4,002	-24.1	46	270	7.2
550	28	4,621	-28.5	45	261	8.0
500	28	5,307	-33.4	43	267	8.9
450	28	6,026	-38.8		275	11.1
400	28	6,838	-44.4		276	13.8
350	28	7,722	-49.5		276	13.4
300	28	8,722	-53.4		273	14.8
250	27	9,886	-54.7		271	15.0
200	21	11,265	-52.0		267	15.0
175	16	12,143	-52.3		252	10.7
150	11	13,117	-52.8		256	14.8
125	11	14,296	-52.2		275	15.3
100	11	15,740	-51.9		271	17.3
80	8	17,217	-51.8			
60	8	19,076	-53.3			
50	8	20,248	-53.7			

BETHEL, ALASKA (1001 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	4	-11.7	74	94	7.2
1,000	29	48				
950	29	447	- 6.4	62	116	4.1
900	29	869	- 7.2	60	145	5.1
850	29	1,314	- 8.1	55	169	8.5
800	29	1,784	-10.1	53	176	10.5
750	29	2,278	-13.0	50	186	15.0
700	29	2,802	-16.3	49	187	18.7
650	28	3,362	-19.6	48	169	16.1
600	28	3,953	-23.5	43	175	16.1
550	28	4,586	-27.5	40	181	14.6
500	28	5,266	-31.6		180	16.9
450	28	6,004	-36.8		178	11.9
400	28	6,811	-42.5		174	7.6
350	28	7,703	-47.8		240	8.5
300	28	8,709	-52.6		222	12.4
250	28	9,879	-54.4		202	16.5
200	28	11,316	-52.0		203	12.2
175	27	12,188	-50.2		198	16.1
150	27	13,198	-49.4		194	16.7
125	27	14,393	-49.3		195	11.7
100	25	15,850	-49.1		194	12.8
80	24	17,312	-49.4			
60	22	19,204	-49.6			
50	21	20,402	-49.7			
40	19	21,870	-50.2			
30	16	23,756	-50.1			
25	16	24,946	-50.9			
20	12	26,466	-51.8			
15	8	28,439	-52.3			

BISMARCK, N. DAK. (959 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	505	-12.2	81	303	1.2
1,000	29	181				
950	29	573	-12.4	72	271	1.7
900	29	989	-11.5	68	302	4.1
850	29	1,428	-11.3	63	310	7.6
800	29	1,892	-12.1	60	309	9.9
750	29	2,380	-14.1	53	306	11.7
700	29	2,906	-16.4	49	296	12.8
650	29	3,455	-19.3	48	289	15.5
600	29	4,052	-22.7	49	288	18.3
550	29	4,681	-26.3	48	290	20.8
500	29	5,370	-30.6	44	278	21.4
450	29	6,102	-35.7		276	22.2
400	29	6,922	-41.4		278	23.9
350	29	7,816	-47.5		283	25.8
300	29	8,822	-53.0		283	30.1
250	29	9,990	-55.5		284	30.7
200	29	11,416	-54.1		289	25.6
175	29	12,276	-53.0		287	25.3
150	29	13,273	-51.7		292	21.8
125	29	14,455	-52.2		285	19.8
100	28	15,889	-53.6		284	16.7
80	28	17,318	-54.9		285	14.4
60	27	19,149	-55.4		284	12.2
50	27	20,310	-56.0		287	9.3
40	26	21,724	-56.6		290	8.2
30	24	23,544	-57.2		287	8.0
25	23	24,696	-57.7		282	8.5
20	18	26,097	-57.5		279	14.6
15	15	27,891	-58.4		279	21.2
10	7	30,458	-56.6			

BOISE, IDAHO (918 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	26	868	- 1.1	82	142	4.1
1,000	26	178				
950	26	594				
900	26	1,025	- .8	70	168	2 3
850	26	1,481	- 2.7	[illegible]	253	4.1
800	26	1,960	- 5.5	63	282	8.2
750	26	2,462	- 8.4	63	283	14.8
700	26	2,997	-11.5	63	288	17.3
650	25	3,560	-15.0	[illegible]	298	20.2
600	25	4,165	-18.4	58	305	22.9
550	25	4,809	-22.6	55	304	25.1
500	25	5,504	-27.3	49	305	27.4
450	25	6,250	-32.5		306	32.3
400	25	7,076	-38.1		311	33.8
350	25	7,983	-44.4		309	38.3
300	[illegible]	9,003	-50.5		311	47.4
250	[illegible]	10,177	-55.5		315	46.4
200	[illegible]	11,591	-56.6		312	42.6
175	24	12,439	-56.2		312	39.6
150	23	13,411	-54.7		[illegible]	36.1
125	23	14,575	-55.5		299	32.3
100	21	15,992	-56.5		305	26.2
80	19	17,399	-57.9		312	22.2
60	15	19,214	-58.0		315	16.7
50	15	20,363	-57.9		330	14.0
40	15	21,771	-57.5		[illegible]	10.1
30	13	23,589	-56.9		342	9.3
25	10	24,734	-57.6		[illegible]	10.1
20	[illegible]	26,146	-57.3			
15	7	27,974	-56.5			
10						
7						
5						

BROWNSVILLE, TEX. (1014 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	7	11.8	86	312	1.2
1,000	29	125	13.4	77	150	3.7
950	29	556	12.5	68	162	12.0
900	29	1,009	10.7	55	189	13.0
850	29	1,484	9.4	45	217	11.3
800	29	1,985	7.6	39	250	10.7
750	29	2,514	6.1		254	13.0
700	29	3,078	4.3		269	18.5
650	29	3,671	.6		269	25.3
600	29	4,314	- 3.5		266	26.2
550	29	4,986	- 8.5		262	29.7
500	29	5,729	-13.2		261	37.7
450	29	6,513	-18.5		265	39.8
400	29	7,393	-24.7			
350	29	8,352	-31.0			
300	29	9,430	-37.6			
250	29	10,669	-45.1			
200	29	12,132	-53.5			
175	28	12,981	-58.0			
150	27	13,936	-63.0			
125	27	15,043	-68.6			
100	27	16,361	-74.0			
80	27	17,656	-74.9			
60	27	19,346	-68.8			
50	25	20,451	-63.2			
40	25	21,840	-58.8			
30	21	23,662	-55.2			
25	20	24,832	-52.7			
20	18	26,289	-49.2			
15	9	28,181	-46.4			

BUFFALO, N. Y. (990 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	182	- 4.4	77	264	6.6
1,000	29	103				
950	29	506	- 4.9	75	277	11.1
900	29	932	- 6.5	76	283	14.8
850	29	1,378	- 7.7	71	287	17.3
800	29	1,849	- 8.6	68	280	19.0
750	29	2,347	-10.4	64	278	20.0
700	29	2,877	-12.5	59	279	22.7
650	29	3,439	-15.0	54	279	25.5
600	29	4,042	-18.2	52	278	26.4
550	29	4,683	-22.0	50	275	28.0
500	29	5,383	-26.5	49	271	30.7
450	29	6,133	-31.5	46	272	35.2
400	29	6,963	-37.4		270	41.4
350	29	7,872	-43.5		271	46.4
300	29	8,896	-49.2		268	53.6
250	29	10,080	-52.6		268	60.2
200	28	11,524	-52.9		266	51.9
175	26	12,372	-51.7		263	51.3
150	26	13,373	-51.8		263	45.5
125	26	14,551	-53.1		261	40.2
100	25	15,980	-55.2		262	33.4
80	24	17,395	-56.5		260	23.5
60	23	19,222	-55.9		264	18.5
50	23	20,381	-56.2		262	16.5
40	23	21,801	-55.6		268	14.0
30	23	23,636	-55.2		267	14.0
25	21	24,798	-54.8		273	13.6
20	21	26,228	-53.7		273	17.7
15	19	28,081	-52.2		272	21.8
10	17	30,716	-49.1		275	30.5
7	8	33,056	-46.2			
5	5	35,141	-46.8			

BURRWOOD, LA. (1015 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	3	9.8	89	16	3.5
1,000	29	128	10.7	79	22	3.7
950	29	556	9.4	71	219	1.4
900	29	1,003	7.7	61	248	8.2
850	29	1,474	6.9	47	265	13.4
800	29	1,971	5.5	42	266	17.7
750	29	2,500	3.6	38	262	22.2
700	29	3,056	2.1		256	27.2
650	29	3,649	- .9		250	33.8
600	29	4,286	- 4.9		252	42.0
550	29	4,960	- 9.4		251	47.4
500	29	5,696	-14.5		251	50.9
450	29	6,481	-19.5		252	57.9
400	29	7,352	-25.3		252	66.6
350	29	8,308	-31.9		254	79.3
300	29	9,382	-38.7		256	89.4
250	29	10,617	-45.4		255	102.0
200	28	12,079	-53.7		258	118.7
175	28	12,929	-57.9		256	111.9
150	27	13,891	-62.8		255	100.1
125	24	15,002	-67.5		261	87.6
100	24	16,332	-71.6		258	73.8
80	21	17,645	-73.6		254	58.1
60	19	19,347	-67.2		255	42.0
50	19	20,461	-62.2		253	27.2
40	17	21,849	-58.2			
30	17	23,676	-54.3			
25	17	24,850	-51.6			
20	16	26,310	-48.6			
15	15	28,217	-46.1		257	10.5
10	11	30,936	-40.6			
7	5	33,365	-37.1			

CAPE HATTERAS, N. C. (1014 MB.)

Standard pressure surface mb	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	4	6.2	78	316	5.4
1,000	29	116	6.7	70	326	8.0
950	29	534	5.1	58	297	11.5
900	29	977	3.9	52	276	14.6
850	29	1,442	3.1	49	263	19.6
800	29	1,932	1.7	44	261	25.3
750	29	2,449	.2	36	259	32.4
700	29	3,002	- 2.2	38	258	38.1
650	29	3,581	- 5.4		259	42.6
600	29	4,212	- 8.7	41	258	49.2
550	29	4,877	-12.5		258	53.8
500	29	5,605	-16.7	37	259	62.8
450	29	6,383	-21.8	35	260	69.9
400	29	7,246	-28.0		260	77.3
350	29	8,191	-34.9		264	82.6
300	29	9,251	-42.1		263	95.4
250	29	10,464	-49.6		264	105.9
200	29	11,907	-54.7		267	111.5
175	28	12,752	-55.5		263	109.8
150	27	13,733	-57.9		265	103.2
125	27	14,873	-62.1		263	87.8
100	26	16,240	-65.2		265	67.0
80	26	17,600	-65.1		264	53.0
60	25	19,370	-61.4		266	24.5
50	24	20,509	-59.2		267	20.4
40	19	21,911	-56.9		285	11.1
30	18	23,745	-54.5		295	15.2
25	15	24,922	-52.7		286	17.1
20	12	26,380	-50.8			
15	9	28,259	-47.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

CARIBOU, ME. (986 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	191	- 7.0	85	305	2.7
1,000	29	79				
950	29	479	- 6.3	77	24	2.3
900	29	902	- 7.0	75	353	2.5
850	29	1,348	- 7.9	75	348	2.5
800	29	1,819	- 8.8	73	266	2.1
750	29	2,317	-10.8	69	255	3.7
700	29	2,845	-13.1	70	252	5.4
650	29	3,403	-15.5	62	249	5.6
600	29	4,008	-18.7	62	239	5.6
550	29	4,648	-22.6	57	237	8.0
500	29	5,346	-26.9	52	238	9.9
450	29	6,093	-32.5	50	234	11.7
400	29	6,920	-38.1		228	13.8
350	29	7,828	-43.8		224	15.7
300	29	8,852	-48.5		235	24.1
250	29	10,042	-52.0		242	28.8
200	28	11,488	-52.3		251	31.1
175	28	12,355	-51.2		252	31.9
150	27	13,360	-51.4		253	26.8
125	27	14,543	-52.3		258	27.0
100	25	15,982	-54.5		255	23.9
80	25	17,407	-56.0		256	21.2
60	24	19,247	-55.2		276	21.8
50	24	20,406	-55.6		272	14.0
40	24	21,834	-55.3		271	13.6
30	22	23,673	-54.8		269	12.6
25	22	24,841	-54.3		268	8.9
20	21	26,278	-53.7		273	17.1
15	19	28,127	-52.8		266	25.6
10	14	30,727	-51.8		269	26.8
7	6	33,118	-49.6			

CHARLESTON, S. C. (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	13	5.3	83	341	2.3
1,000	29	132	7.2	73	354	3.3
950	29	551	6.8	58	277	4.7
900	29	998	6.7	52	260	9.5
850	29	1,467	5.5	45	257	15.7
800	29	1,962	4.1	40	254	22.7
750	29	2,481	2.1		251	30.7
700	29	3,041	- .3		254	34.4
650	29	3,626	- 3.4		252	40.2
600	29	4,262	- 7.2	39	256	47.4
550	29	4,930	-11.3	35	255	53.6
500	29	5,662	-15.7		256	61.4
450	29	6,443	-20.6		256	67.6
400	29	7,314	-26.6		258	71.1
350	29	8,265	-33.3		258	78.3
300	29	9,330	-40.9		260	85.5
250	29	10,551	-48.5		260	107.1
200	27	11,990	-54.6		256	107.3
175	27	12,840	-52.9		256	95.2
150	27	13,812	-59.7		258	90.9
125	26	14,942	-64.7		259	82.2
100	25	16,293	-68.2			
80	22	17,629	-68.2			
60	21	19,371	-63.5			
50	21	20,500	-59.9		260	13.4
40	21	21,903	-57.4		303	5.4
30	20	23,732	-54.7		343	6.2
25	20	24,903	-53.1		296	9.5
20	19	26,337	-51.4		281	17.7
15	18	28,218	-48.4		279	24.9
10	13	30,922	-43.2			
7	8	33,398	-38.1			

COLUMBIA, MO. (989 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	238	- 4.3	83	348	4.5
1,000	29	144				
950	29	549	- 4.3	74	342	4.1
900	29	976	- 4.1	63	298	6.6
850	29	1,427	- 4.4	54	296	8.4
800	29	1,903	- 5.8	54	292	11.5
750	29	2,404	- 7.8	54	288	12.2
700	29	2,942	-10.4	54	284	14.8
650	29	3,503	-13.3	53	277	18.3
600	29	4,115	-16.3	50	275	23.1
550	29	4,759	-20.1	45	274	29.3
500	29	5,466	-25.0	45	273	32.4
450	29	6,217	-30.1	43	267	37.9
400	29	7,053	-36.2		264	41.0
350	29	7,967	-42.7		261	48.0
300	29	8,993	-48.9		261	50.1
250	29	10,176	-53.8		258	54.0
200	29	11,603	-54.7		257	57.7
175	29	12,461	-53.3		259	59.8
150	27	13,453	-53.3		255	57.1
125	27	14,626	-54.2		256	42.6
100	23	16,049	-57.4		254	39.1
80	17	17,453	-58.5		257	28.4
60	14	19,254	-57.8		261	16.9
50	13	20,413	-56.5		262	13.8
40	13	21,831	-55.6		265	13.4
30	11	23,662	-55.4			
25	8	24,833	-54.6			
20	7	26,281	-52.8			
15						
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DAYTON, OHIO (980 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	297	- 3.6	[illegible]	11	1.0
1,000	28	135				
950	28	542	- 3.9	72	281	5.8
900	28	967	- 5.0	69	279	9.5
850	28	1,417	- 5.2	60	279	13.4
800	28	1,893	- 6.4	58	274	16.5
750	28	2,395	- 7.5	53	275	20.2
700	28	2,932	- 9.9	49	276	23.5
650	28	3,496	-12.6	46	272	29.1
600	28	4,109	-15.9	47	269	33.4
550	28	4,755	-19.9	48	267	36.1
500	28	5,462	-24.7	47	264	42.0
450	28	6,214	-30.1	44	263	46.8
400	28	7,051	-35.7	44	259	54.0
350	28	7,968	-41.7		259	61.4
300	28	8,999	-47.7		259	72.1
250	28	10,187	-53.2		259	80.8
200	28	11,620	-53.7		258	79.1
175	28	12,479	-53.5		259	73.8
150	28	13,470	-53.9		260	62.6
125	28	14,636	-55.5		257	56.5
100	27	16,056	-57.9		256	42.6
80	25	17,455	-59.5		255	32.3
60	23	19,257	-58.0		255	19.0
50	22	20,409	-57.4		256	17.3
40	21	21,822	-56.6		261	14.6
30	20	23,654	-55.4		275	17.5
25	20	24,818	-54.9		270	19.0
20	20	26,246	-54.1		272	24.9
15	18	28,092	-52.6		272	31.3
10	17	30,735	-48.7		264	49.9
7	12	33,128	-45.3			

DENVER, COLO (834 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,611	- 8.4		270	1.4
1,000	29	176				
950	29	582				
900	[illegible]	1,010				
850	[illegible]	1,460				
800	29	1,934	- 5.7	63	320	6.0
750	29	2,440	- 7.7	59	332	9.9
700	29	2,974	-10.5	57	330	14.8
650	29	3,540	-13.9	56	326	17.3
600	29	[illegible]	-17.9	58	317	20.0
550	29	4,788	-22.2	[illegible]	[illegible]	20.6
500	29	5,484	-27.1	57	307	24.3
450	29	6,231	-32.6	53	303	27.2
400	[illegible]	[illegible]	[illegible]		296	32.1
350	29	7,962	[illegible]		[illegible]	36.3
300	[illegible]	8,978	[illegible]		[illegible]	42.7
250	29	10,150	[illegible]		[illegible]	[illegible]
200	29	11,570	-55.6		291	42.0
175	29	12,423	-54.8		288	42.2
150	29	13,411	-54.5		285	40.2
125	29	14,577	-55.7		285	36.3
100	29	15,990	-57.9		283	27.2
80	27	17,394	-58.6		281	17.9
60	27	19,201	-58.7		281	13.0
50	23	20,341	-57.7		272	10.3
40	19	21,756	-56.4		277	9.9
30	14	23,583	-55.5		265	12.0
25	13	24,758	-54.6		268	14.0
20	10	26,213	-52.7		267	18.8
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DODGE CITY, KANS. (924 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	792	- 6.3	89	2	4.3
1,000	29	166				
950	29	572				
900	29	997	- 4.2	73	359	6.8
850	29	1,449	- 3.8	67	336	6.8
800	29	1,926	- 4.9	63	326	8.9
750	29	2,433	- 6.7	59	313	12.4
700	29	2,969	- 9.4	57	310	13.0
650	29	3,536	-12.5	54	300	16.1
600	29	4,146	-16.2	51	293	21.8
550	29	4,795	-20.0	44	275	25.8
500	29	5,498	-24.6	44	270	28.8
450	29	6,252	-29.4	42	269	25.8
400	29	7,089	-35.7		265	37.5
350	29	8,005	-42.3		263	40.0
300	29	9,032	-49.6		266	41.8
250	28	10,206	-55.4			
200	27	11,630	-55.9			
175	25	12,484	-54.6			
150	24	13,471	-54.6			
125	23	14,631	-55.7			
100	22	16,047	-58.7			
80	21	17,444	-59.6			
60	20	19,247	-58.9			
50	19	20,398	-57.7			
40	17	21,811	-57.1			
30	15	23,636	-55.5			
25	14	24,805	-54.1			
20	14	26,241	-53.4			
15	[illegible]	28,113	-51.5			
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EL PASO, TEX. (880 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,197	4.0	49	260	4.7
1,000	29	136				
950	29	560				
900	29	1,012				
850	29	1,476	5.0	41	280	8.9
800	29	1,968	2.2	40	283	14.4
750	29	2,482	- 1.2	40	283	19.0
700	29	3,032	- 4.5	40	283	22.0
650	29	3,607	- 7.7	35	287	24.1
600	29	4,231	-11.4	35	285	28.2
550	29	4,890	-15.5		293	25.6
500	29	5,608	-19.9		299	25.1
450	29	6,376	-24.9		308	23.5
400	29	7,230	-30.8		322	24.5
350	29	8,165	-37.4		303	23.3
300	29	9,215	-44.2			
250	29	10,419	-50.6			
200	29	11,860	-54.8			
175	29	12,711	-56.4			
150	29	13,688	-58.0			
125	28	14,827	-61.6			
100	28	16,198	-65.4			
80	25	17,552	-66.5			
60	25	19,305	-63.2			
50	25	20,434	-60.2			
40	22	21,840	-57.4			
30	20	23,673	-55.3			
25	18	24,842	-53.9			
20	16	26,276	-52.4			
15	7	28,118	-51.3			
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ELY, NEV. (807 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,908	- 8.1	73	205	3.7
1,000	29	205				
950	29	613				
900	29	1,046				
850	29	1,497				
800	29	1,972			239	4.9
750	29	2,478	- 6.0	58	306	5.6
700	29	3,015	- 9.0	58	309	15.3
650	29	3,583	-12.3	56	307	20.6
600	29	4,193	-15.9	51	309	25.3
550	29	4,839	-19.8	46	306	30.9
500	29	5,544	-24.2	41	306	36.3
450	29	6,303	-29.5	40	307	38.5
400	29	7,137	-35.0		310	41.4
350	29	8,056	-41.8		309	46.2
300	29	9,085	-48.6		310	50.1
250	29	10,266	-55.0		314	52.5
200	29	11,677	-59.0		307	51.5
175	29	12,516	-58.3		304	40.8
150	29	13,487	-57.5		297	36.7
125	28	14,629	-58.0		307	38.5
100	28	16,033	-59.5		301	30.5
80	27	17,420	-61.5			
60	27	19,202	-61.3		299	13.6
50	27	20,337	-59.8		306	9.9
40	26	21,731	-58.7		281	6.0
30	25	23,542	-58.1		281	8.2
25	23	24,696	-57.2		275	6.4
20	21	26,116	-55.6		259	9.3
15	17	27,951	-54.4		280	11.7
10	12	30,577	-51.5			
7	5	33,109	-45.3			

FAIRBANKS, ALASKA (996 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	135	-17.1	73	19	1.2
1,000	28	104				
950	28	503	- 8.6	61	104	4.7
900	28	918	- 7.7	58	126	8.2
850	28	1,363	- 7.6	58	164	5.8
800	28	1,834	- 8.6	57	193	5.2
750	28	2,329	-10.9	52	200	5.8
700	28	2,860	-14.2	52	217	5.2
650	28	3,415	-17.8	53	217	7.4
600	28	4,012	-21.7	51	215	7.6
550	28	4,643	-26.2	48	228	10.1
500	28	5,329	-31.2	52	231	11.9
450	27	6,066	-36.4	47	228	15.2
400	27	6,879	-42.2		233	15.7
350	27	7,770	-48.3		236	18.1
300	27	8,771	-54.3		241	17.3
250	27	9,931	-57.2		216	17.7
200	27	11,349	-54.7		218	14.2
175	27	12,208	-53.0		228	17.5
150	26	13,200	-51.6		233	14.4
125	26	14,386	-51.4		229	12.4
100	25	15,843	-50.9		236	13.6
80	24	17,296	-51.6		245	12.8
60	24	19,159	-52.1		250	13.2
50	24	20,338	-52.1		261	12.8
40	22	21,782	-52.5		277	15.3
30	20	23,644	-53.7		297	19.0
25	17	24,843	-53.7		292	20.4
20	14	26,320	-54.5		303	20.2
15	8	28,189	-56.0			
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FLINT, MICH. (986 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	234	- 6.2	85	290	4.5
1,000	29	123				
950	29	527	- 5.5	77	301	6.8
900	29	947	- 7.4	76	301	9.9
850	29	1,392	- 7.8	69	305	11.7
800	29	1,863	- 8.8	62	303	12.8
750	29	2,358	-10.4	58	[illegible]	14.4
700	29	2,890	-12.3	53	292	18.5
650	29	3,451	-14.8	46	286	20.2
600	29	4,056	-18.2	47	284	22.9
550	29	4,692	-22.0	45	276	25.3
500	29	5,396	-26.5	42	272	28.6
450	29	6,140	-31.7	39	267	34.2
400	29	6,973	-37.8		266	38.3
350	29	7,880	-44.5		263	43.3
300	29	8,898	-50.0		259	49.2
250	29	10,081	-53.0		[illegible]	54.0
200	29	11,520	-52.5		262	50.1
175	29	12,384	-52.0		260	47.4
150	29	13,383	-51.8		259	45.5
125	29	14,563	-52.8		259	40.6
100	29	15,996	-55.0		258	32.8
80	29	17,418	-56.3		259	26.2
60	29	19,244	-56.6		259	19.2
50	29	20,401	-56.5		[illegible]	16.3
40	29	21,821	-55.6		264	17.1
30	27	23,656	-54.8		272	17.5
25	26	24,824	-54.3		275	17.3
20	23	26,247	-53.3		276	21.2
15	23	28,104	-52.3		274	27.6
10	13	30,765	-49.0		272	48.6
7	10	33,161	-45.6			

FORT WORTH, TEX. (995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	180	3.0	74	319	3.1
1,000	29	141				
950	29	557	2.9	65	299	2.9
900	29	994	3.0	58	281	7.4
850	29	1,457	2.3	58	266	11.9
800	29	1,945	.3	58	275	16.7
750	29	2,460	- 2.1	52	278	19.0
700	29	3,006	- 5.0	50	277	19.4
650	29	3,581	- 8.3	46	275	24.5
600	29	4,202	-12.0	45	270	29.1
550	29	4,856	-16.1	44	268	34.8
500	29	5,574	-20.2	40	267	42.9
450	29	6,336	-25.6	38	266	48.6
400	29	7,191	-31.4		263	57.1
350	29	8,125	-37.5		260	66.1
300	29	9,173	-44.6		259	73.1
250	29	10,374	-51.4		258	79.3
200	29	11,813	-54.2		261	80.2
175	29	12,667	-55.3		261	77.3
150	29	13,647	-57.2		259	75.4
125	29	14,791	-60.5		260	59.8
100	29	16,171	-63.8		262	50.3
80	29	17,534	-65.3		263	33.8
60	26	19,291	-62.7		258	22.3
50	25	20,424	-59.4		255	15.5
40	23	21,829	-57.2		263	9.7
30	21	23,657	-55.4		258	11.5
25	21	24,823	-54.2		251	8.2
20	20	26,264	-52.6		264	12.8
15	18	28,138	-50.1		261	8.9
10	15	30,839	-44.8		268	24.1
7	12	33,251	-41.0			
5						

GLASGOW, MONT. (935 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	696	-12.1	88	86	2.3
1,000	29	175				
950	29	572				
900	29	987	- 9.1	79	293	1.4
850	29	1,431	- 8.6	70	301	8.5
800	29	1,899	-10.3	67	305	10.5
750	29	2,393	-12.7	66	306	13.8
700	29	2,919	-15.7	63	304	14.0
650	29	3,471	-18.7	60	312	18.1
600	29	4,067	-22.0	56	313	19.2
550	29	4,699	-25.9	49	313	22.0
500	29	5,387	-30.3	46	313	21.8
450	29	6,123	-35.3		316	22.7
400	29	6,941	-40.6		310	21.6
350	29	7,839	-46.6		315	19.4
300	29	8,849	-52.6		308	18.5
250	29	10,014	-56.4		299	20.6
200	28	11,436	-54.1		306	20.4
175	28	12,296	-52.6		298	18.5
150	28	13,294	-52.1		301	19.4
125	28	14,476	-52.0		291	15.2
100	28	15,917	-53.7		295	14.0
80	28	17,346	-55.0		300	13.0
60	28	19,184	-55.5		309	9.3
50	28	20,344	-56.0		314	9.7
40	27	21,762	-56.3		313	7.6
30	27	23,589	-56.5		305	9.1
25	27	24,745	-56.8		299	8.7
20	23	26,170	-56.5		287	13.6
15	17	28,006	-55.5			
10	9	30,553	-56.4			
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GRAND JUNCTION, COLO. (850 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,474	- 4.3	74	113	4.1
1,000	29	179				
950	29	588				
900	29	1,010				
850	29	1,477			116	4.9
800	29	1,956	- 4.7	58	133	2.9
750	29	2,460	- 7.5	58	283	1.7
700	29	2,995	-10.8	61	301	8.0
650	29	3,557	-13.6	63	300	14.4
600	29	4,166	-17.3	63	304	18.7
550	29	4,807	-21.2	56	299	23.7
500	29	5,510	-25.9	51	298	27.2
450	29	6,260	-31.3	50	295	28.2
400	29	7,090	-37.0		296	34.8
350	29	8,001	-43.4		297	38.1
300	29	9,022	-50.1		297	42.7
250	29	10,199	-55.3		299	49.7
200	28	11,612	-56.6		297	51.5
175	27	12,455	-55.7		295	45.1
150	27	13,439	-54.6		290	41.4
125	27	14,604	-55.5		291	36.7
100	25	16,015	-58.5		287	28.2
80	22	17,391	-59.4		288	20.2
60	21	19,195	-59.2		280	13.6
50	20	20,342	-58.7		290	12.0
40	17	21,747	-58.0		261	8.0
30	14	23,565	-57.2		255	9.5
25	13	24,717	-57.6		265	11.1
20	10	26,140	-56.7			
15	6	27,981	-56.0			
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GREAT FALLS, MONT (886 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,123	- 5.9	70	232	4.7
1,000	29	161				
950	29	566				
900	29	997				
850	29	1,447	- 4.9	55	250	14.0
800	29	1,922	- 7.5	59	272	16.3
750	29	2,419	-10.5	62	288	18.1
700	29	2,950	-13.8	64	291	18.5
650	29	3,507	-16.6	56	294	19.8
600	29	4,109	-20.3	53	296	21.4
550	29	4,745	-24.2	52	298	23.9
500	29	5,438	-28.6	48	300	26.6
450	29	6,179	-33.8	46	301	27.6
400	29	7,002	-39.8		305	29.7
350	29	7,902	-46.2		307	31.5
300	29	8,912	-52.6		307	34.8
250	29	10,079	-56.2		303	36.7
200	29	11,497	-55.5		307	30.3
175	29	12,350	-54.3		310	27.2
150	29	13,343	-52.9		306	23.5
125	29	14,518	-52.8		304	22.9
100	28	15,956	-54.2		306	19.4
80	24	17,374	-55.6		306	15.9
60	21	19,201	-55.7		308	12.8
50	20	20,372	-56.2		311	10.1
40	16	21,793	-56.0		325	9.3
30	15	23,623	-56.2		325	9.5
25	14	24,792	-56.3		319	9.5
20	11	26,214	-56.0			
15	7	28,065	-55.1			
10						
7						
5						

GREEN BAY, WIS. (991 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	210	- 8.1	85	332	6.0
1,000	29	135				
950	29	532	- 7.6	75	348	8.5
900	29	954	- 9.1	70	351	8.5
850	29	1,396	- 9.5	61	342	8.4
800	29	1,864	-10.3	55	334	9.5
750	29	2,358	-11.8	53	320	9.3
700	29	2,885	-14.4	51	307	10.5
650	29	3,440	-17.2	45	295	11.1
600	29	4,040	-20.4	39	283	12.0
550	29	4,674	-24.1	39	274	15.3
500	29	5,370	-28.6	39	269	17.5
450	29	6,109	-33.8	42	265	18.7
400	29	6,933	-39.6		262	21.4
350	28	7,823	-46.2		263	24.3
300	28	8,834	-51.9		262	28.6
250	28	10,008	-53.5		[illegible]	31.9
200	28	11,446	-52.4		258	33.8
175	28	12,311	-51.5		260	32.8
150	28	13,313	-51.4		258	31.3
125	28	14,498	-51.8		258	27.8
100	27	15,939	-54.1		262	27.0
80	27	17,366	-55.5		260	21.4
60	25	19,192	-56.0		260	16.1
50	24	20,353	-56.2		261	13.4
40	24	21,770	-56.3		265	12.0
30	23	23,593	-56.2		272	13.4
25	22	24,752	-55.9		274	15.7
20	19	26,161	-55.2		270	22.7
15	15	28,003	-54.2		272	22.0
10	13	30,592	-52.6		[illegible]	36.7
7	10	[illegible]	-49.5			
5	6	35,205	-46.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

FEBRUARY 1960

GREENSBORO, N. C. (984 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	273	0.0	79	308	1.9
1,000--	29	137				
950----	29	551	1.7	59	336	5.2
900----	29	987	1.5	51	315	9.1
850----	29	1,447	.7	45	281	12.8
800----	29	1,933	- .1	41	272	16.9
750----	29	2,445	- 2.0	39	267	18.5
700----	29	2,995	- 4.2	36	260	25.8
650----	29	3,571	- 7.3	39	253	27.6
600----	29	4,196	-10.8	42	261	35.9
550----	29	4,852	-14.6	42	258	36.9
500----	29	5,576	-18.9		264	42.2
450----	29	6,349	-23.9			
400----	29	7,204	-29.6			
350----	29	8,143	-36.3			
300----	29	9,195	-44.0			
250----	29	10,400	-50.4			
200----	29	11,840	-54.4			
175----	28	12,695	-55.8			
150----	28	13,672	-57.2			
125----	27	14,813	-60.1			
100----	25	16,184	-62.7			
80-----	24	17,560	-62.4			
60-----	22	19,343	-59.3			
50-----	22	20,490	-57.4			
40-----	21	21,907	-55.3			
30-----	19	23,751	-53.8			
25-----	18	24,928	-53.3			
20-----	16	26,379	-51.7			
15-----	14	28,268	-48.0			
10-----	9	31,030	-40.7			

HILO, HAWAII (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	11	18.5	82	254	3.7
1,000--	29	146	20.3	75	295	3.7
950----	29	587	17.6	78	25	4.3
900----	29	1,049	14.3	80	45	5.2
850----	29	1,530	11.8	77	68	5.1
800----	29	2,038	11.1	52	84	4.7
750----	29	2,579	9.7	37	68	3.9
700----	28	3,147	7.1		141	1.6
650----	28	3,749	3.6			.0
600----	28	4,398	- .1		279	2.1
550----	28	5,084	- 4.4		258	5.1
500----	28	5,833	- 9.3		260	9.1
450----	28	6,634	-15.0		261	14.6
400----	28	7,520	-21.5		266	20.0
350----	28	8,493	-27.7		263	28.0
300----	28	9,586	-34.4		279	30.7
250----	28	10,841	-42.3		302	34.6
200----	28	12,317	-52.8		290	34.2
175----	28	13,167	-58.8		298	31.9
150----	25	14,124	-65.1		301	25.6
125----	22	15,222	-71.2		272	14.4
100----	22	16,521	-76.7		263	9.5
80-----	22	17,795	-77.9		261	8.2
60-----	20	19,462	-71.0		244	5.6
50-----	18	20,554	-66.4			
40-----	17	21,923	-61.3			
30-----	17	23,726	-56.6			
25-----	15	24,890	-55.0			
20-----	9	26,320	-53.1			
15-----						
10-----						

INTERNAT. FALLS, MINN. (975 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	360	-15.5	68	350	1.4
1,000--	29	168				
950----	29	563	-12.3	70	45	3.1
900----	29	973	-10.9	64	357	2.5
850----	29	1,412	-11.6	54	332	4.7
800----	29	1,875	-12.6	49	316	5.4
750----	29	2,365	-14.7	53	310	5.4
700----	29	2,887	-16.9	55	295	7.6
650----	29	3,440	-19.9	54	291	9.1
600----	29	4,030	-23.4	54	287	9.9
550----	29	4,658	-27.3	50	279	11.5
500----	29	5,343	-31.6	45	281	11.9
450----	29	6,078	-36.2		272	13.8
400----	29	6,891	-41.7		268	17.1
350----	29	7,785	-47.4		271	18.8
300----	29	8,793	-51.9		277	22.0
250----	29	9,969	-53.8		276	21.4
200----	29	11,406	-52.4		267	19.0
175----	29	12,272	-51.0		273	19.4
150----	29	13,276	-50.6		275	19.6
125----	29	14,463	-51.2		277	19.0
100----	29	15,911	-52.3		274	16.1
80-----	27	17,345	-53.5		276	15.2
60-----	25	19,187	-54.9		278	11.3
50-----	25	20,351	-55.2		290	8.9
40-----	23	21,772	-55.8		294	8.9
30-----	18	23,587	-56.0		286	9.9
25-----	15	24,761	-55.8		278	12.4
20-----	11	26,182	-55.7		274	16.7
15-----	8	28,037	-54.3			
10-----						

JACKSON, MISS. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	101	3.1	86		0.0
1,000--	29	134			55	2.5
950----	29	554	4.2	69	281	2.3
900----	29	992	3.7	59	279	7.4
850----	29	1,456	2.7	50	281	11.1
800----	29	1,945	.8	47	276	15.2
750----	29	2,464	- .9	40	268	19.2
700----	29	3,011	- 3.2	42	263	25.1
650----	29	3,594	- 5.7	36	261	33.0
600----	29	4,218	- 9.2	32	257	39.2
550----	29	4,883	-13.3		255	43.1
500----	29	5,606	-18.4	35	252	50.1
450----	29	6,379	-23.5	37	250	53.4
400----	29	7,236	-28.4		253	63.0
350----	29	8,182	-34.4		254	72.7
300----	29	9,245	-41.2		253	81.6
250----	29	10,464	-48.1		248	95.0
200----	28	11,916	-53.7		243	87.0
175----	28	12,770	-55.7		246	93.8
150----	28	13,745	-59.1			
125----	28	14,880	-62.4			
100----	27	16,244	-66.3			
80-----	24	17,592	-67.1			
60-----	21	19,339	-63.1			
50-----	21	20,469	-59.5			
40-----	21	21,873	-57.3			
30-----	19	23,703	-55.2			
25-----	18	24,869	-53.2			
20-----	17	26,318	-51.4			
15-----	14	28,201	-49.0			
10-----	6	30,929	-41.3			

JACKSONVILLE, FLA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	6	7.9	89	308	6.0
1,000--	28	133	10.2	76	294	2.7
950----	28	555	9.5	66	249	6.8
900----	28	1,008	8.8	56	239	12.8
850----	28	1,480	7.3	51	244	17.1
800----	28	1,978	5.8	43	251	21.8
750----	28	2,500	4.1		254	27.2
700----	28	3,064	1.7	37	255	32.6
650----	28	3,650	- 1.3	36	257	39.1
600----	28	4,291	- 5.3	33	257	44.7
550----	28	4,963	- 9.4		257	47.2
500----	28	5,701	-13.9		257	54.8
450----	28	6,484	-19.3		256	60.6
400----	28	7,360	-25.2		257	66.3
350----	28	8,315	-32.1		259	71.5
300----	28	9,387	-39.5		260	85.5
250----	27	10,616	-47.1		263	100.6
200----	27	12,067	-54.7		265	107.3
175----	26	12,915	-57.9		265	103.8
150----	26	13,878	-61.8		265	93.5
125----	25	14,989	-66.7		264	76.9
100----	24	16,323	-71.1		266	67.4
80-----	23	17,639	-71.1		262	54.8
60-----	22	19,362	-64.8		260	34.4
50-----	22	20,482	-62.1		257	14.0
40-----	22	21,876	-58.4		279	6.2
30-----	22	23,697	-55.0		75	11.5
25-----	22	24,866	-53.3		331	4.7
20-----	21	26,304	-51.3		292	12.2
15-----	18	28,193	-45.9			
10-----	7	30,935	-38.8			

KING SALMON, ALASKA (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	15	- 6.3	83	19	6.2
1,000--	28	46			121	6.0
950----	28	452	- 3.1	63	100	5.8
900----	28	879	- 4.5	60	122	7.8
850----	28	1,328	- 6.0	55	142	9.3
800----	28	1,801	- 8.6	53	152	9.5
750----	28	2,296	-11.6	50	159	10.1
700----	28	2,824	-15.1	47	163	11.9
650----	28	3,377	-18.7	45	169	14.6
600----	28	3,973	-22.5	43	171	18.7
550----	28	4,600	-26.6	44	176	18.5
500----	28	5,289	-31.2	44	178	20.0
450----	28	6,022	-36.5		179	21.6
400----	28	6,836	-42.1		185	25.3
350----	28	7,728	-47.8		193	29.5
300----	28	8,733	-52.9		194	35.4
250----	28	9,901	-55.3		191	26.6
200----	28	11,333	-52.6		191	20.6
175----	27	12,202	-50.8		194	21.2
150----	27	13,209	-49.9		194	17.5
125----	26	14,404	-49.6		195	17.1
100----	25	15,868	-49.7		201	13.8
80-----	24	17,314	-50.0		198	11.5
60-----	23	19,198	-50.3		205	8.9
50-----	22	20,401	-50.1		218	5.8
40-----	18	21,895	-50.2		201	2.5
30-----	16	23,773	-51.2		25	5.1
25-----	13	24,986	-51.5		51	14.2
20-----	11	26,386	-53.6			
15-----	7	28,321	-53.6			
10-----						

KOTZEBUE, ALASKA (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	27	5	-16.8	76	114	10.5
1,000--	27	91			124	11.9
950----	27	486	-10.6	61	142	12.8
900----	27	900	-10.5	58	150	13.8
850----	27	1,340	-11.0	57	140	12.6
800----	27	1,805	-12.7	57	145	10.7
750----	27	2,289	-14.8	55	161	12.4
700----	27	2,817	-17.8	50	162	15.9
650----	27	3,357	-20.7		161	17.1
600----	27	3,957	-24.3	42	167	20.6
550----	27	4,577	-28.5		163	22.3
500----	27	5,264	-33.3		167	24.3
450----	27	5,984	-38.2		167	25.6
400----	27	6,801	-43.6		166	25.5
350----	27	7,689	-48.7		164	25.8
300----	27	8,692	-53.5		168	23.3
250----	27	9,862	-54.8		173	22.3
200----	27	11,296	-52.2		183	18.3
175----	26	12,166	-50.5		187	14.8
150----	23	13,168	-50.4		186	15.7
125----	22	14,356	-50.1		193	15.5
100----	21	15,803	-49.9		203	15.5
80-----	21	17,257	-50.8		206	15.9
60-----	20	19,133	-51.0		215	17.3
50-----	18	20,325	-51.5		208	16.1
40-----	15	21,784	-52.1		206	15.2
30-----	11	23,677	-52.4		239	14.2
25-----	10	24,861	-52.9			
20-----	6	26,346	-52.9			
15-----						
10-----						

LAKE CHARLES, LA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	5	5.5	88	241	0.6
1,000--	29	137	6.5	76	37	4.7
950----	29	561	7.1	64	334	1.4
900----	29	1,004	6.9	53	259	4.1
850----	29	1,474	5.5	45	262	10.3
800----	29	1,968	3.0	42	266	15.2
750----	29	2,492	.5	39	269	15.7
700----	29	3,040	- 1.7	33	268	19.0
650----	29	3,627	- 4.1		267	25.8
600----	29	4,257	- 7.4		262	32.1
550----	29	4,927	-11.3		257	40.8
500----	29	5,655	-16.3		255	46.6
450----	29	6,435	-21.9		252	50.3
400----	29	7,298	-28.0		251	48.4
350----	29	8,245	-34.5			
300----	27	9,306	-41.4			
250----	24	10,519	-47.5			
200----	21	11,978	-53.9			
175----	21	12,832	-56.7			
150----	19	13,793	-60.2			
125----	18	14,922	-64.4			
100----	16	16,276	-69.2			
80-----	15	17,600	-70.8			
60-----	15	19,329	-65.0			
50-----	15	20,451	-60.4			
40-----	15	21,849	-57.8			
30-----	15	23,675	-54.7			
25-----	14	24,842	-52.9			
20-----	13	26,293	-49.7			
15-----	10	28,194	-46.5			
10-----	8	30,921	-38.7			

LANDER, WYO. (825 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,696	-10.8	71	261	2.7
1,000--	29	190				
950----	29	590				
900----	29	1,015				
850----	29	1,464				
800----	29	1,935	- 7.8	50	299	1.9
750----	29	2,432	- 9.3	49	322	4.9
700----	29	2,968	-11.9	47	314	10.1
650----	29	3,524	-15.1	49	319	14.6
600----	29	4,133	-19.1	52	317	19.0
550----	29	4,768	-23.4	49	310	19.8
500----	29	5,466	-28.2	46	308	23.5
450----	29	6,206	-33.8	46	302	22.5
400----	28	7,031	-39.8		308	27.4
350----	28	7,931	-46.1		306	32.6
300----	28	8,942	-51.8		307	36.3
250----	28	10,113	-56.2		307	43.3
200----	28	11,527	-56.5		307	42.0
175----	28	12,377	-54.7		306	40.6
150----	28	13,366	-54.0		302	35.6
125----	28	14,535	-54.6		298	29.9
100----	27	15,957	-55.8		297	27.4
80-----	27	17,372	-57.4		295	22.2
60-----	27	19,185	-58.4		301	15.5
50-----	26	20,333	-57.6		302	11.1
40-----	23	21,741	-57.6		301	9.5
30-----	22	23,555	-57.6		294	9.7
25-----	21	24,707	-57.2		286	9.5
20-----	20	26,116	-57.1		278	10.9
15-----	16	27,941	-56.1		275	20.2
10-----						

LAS VEGAS, NEV. (940 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	660	4.4	50	276	4.7
1,000--	29	152				
950----	29	573				
900----	29	1,018	6.1	38	324	6.6
850----	29	1,484	3.4	39	322	7.6
800----	29	1,973	1.0	39	314	10.7
750----	29	2,486	- 1.8	39	317	12.8
700----	29	3,035	- 4.7	37	317	15.9
650----	29	3,608	- 8.3	38	310	19.2
600----	29	4,231	-12.0	38	314	27.0
550----	29	4,884	-15.8	33	315	31.9
500----	29	5,605	-20.4		311	36.7
450----	29	6,364	-26.0		309	40.2
400----	29	7,217	-32.2		306	45.1
350----	29	8,148	-38.6		303	52.1
300----	29	9,192	-45.6		301	63.9
250----	29	10,386	-52.9		299	76.2
200----	29	11,806	-58.6		298	75.4
175----	29	12,644	-58.9		293	76.9
150----	29	13,611	-58.9		293	65.9
125----	29	14,754	-60.0		291	53.8
100----	28	16,139	-63.4		292	45.3
80-----	27	17,507	-64.1		289	34.4
60-----	23	19,266	-62.4		293	19.4
50-----	23	20,394	-61.1		298	12.4
40-----	22	21,788	-59.1		305	10.5
30-----	22	23,598	-57.1		281	8.9
25-----	21	24,749	-56.2		282	12.4
20-----	20	26,175	-54.6		266	14.6
15-----	18	28,024	-52.4		269	25.5
10-----	10	30,706	-47.4			

LITTLE ROCK, ARK. (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	79	1.4	79	311	3.5
1,000--	29	135			337	4.1
950----	29	551	1.4	66	291	4.1
900----	29	983	1.0	57	293	5.8
850----	29	1,442	.2	48	275	9.3
800----	29	1,927	- 1.6	44	274	14.4
750----	29	2,439	- 3.9	41	276	16.7
700----	29	2,981	- 6.5	37	272	21.6
650----	29	3,557	- 9.5	40	271	22.5
600----	29	4,172	-13.1	39	269	28.4
550----	29	4,824	-17.2	43	267	28.8
500----	29	5,539	-21.9	45	261	35.8
450----	29	6,300	-26.8	43	257	36.3
400----	29	7,149	-32.5	41	254	35.0
350----	29	8,081	-38.2		242	40.6
300----	29	9,126	-44.6			
250----	28	10,331	-51.9			
200----	28	11,765	-54.4			
175----	28	12,621	-54.6			
150----	27	13,608	-56.5			
125----	26	14,759	-59.3			
100----	24	16,143	-62.6			
80-----	24	17,514	-63.6			
60-----	22	19,290	-60.2			
50-----	22	20,432	-57.9			
40-----	21	21,842	-56.4			
30-----	21	23,678	-53.8			
25-----	21	24,851	-52.7			
20-----	20	26,297	-51.2			
15-----	17	28,188	-47.7			
10-----	5	30,839	-44.6			

McGRATH, ALASKA (998 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	103	-16.7	70	206	0.6
1,000--	29	91			137	4.1
950----	29	483	- 9.8	69	105	5.6
900----	29	902	- 6.9	65	141	7.2
850----	29	1,349	- 6.9	62	149	7.8
800----	29	1,820	- 8.9	59	156	9.3
750----	29	2,313	-11.8	58	164	10.7
700----	29	2,842	-15.2	57	178	11.5
650----	29	3,394	-18.8	55	177	14.0
600----	29	3,991	-22.6	52	174	15.5
550----	29	4,616	-26.8	47	173	18.1
500----	29	5,304	-31.6	42	171	19.8
450----	29	6,033	-37.1		181	19.2
400----	29	6,847	-43.0		186	20.2
350----	29	7,736	-48.6		179	20.4
300----	29	8,738	-53.4		177	17.7
250----	29	9,904	-55.1		175	16.1
200----	29	11,335	-52.9		192	14.4
175----	29	12,200	-51.4		186	14.4
150----	29	13,204	-49.9		191	15.2
125----	28	14,392	-49.6		195	11.9
100----	27	15,840	-50.0		194	11.9
80-----	27	17,298	-50.2		210	11.9
60-----	26	19,178	-50.7		221	9.7
50-----	26	20,366	-50.8		226	11.9
40-----	22	21,830	-51.7		247	8.9
30-----	19	23,708	-53.2		259	10.3
25-----	16	24,883	-54.3		274	8.0
20-----	13	26,326	-54.2			
15-----	5	28,320	-54.0			
10-----						

MEDFORD, OREG. (972 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	401	2.5	86	184	0.6
1,000--	29	168				
950----	29	589	3.7	75	245	1.7
900----	29	1,024	2.8	68	195	4.9
850----	29	1,485	.3	67	233	8.4
800----	29	1,969	- 2.0	61	260	12.4
750----	29	2,481	- 4.5	58	281	16.9
700----	29	3,021	- 7.1	52	293	21.0
650----	29	3,592	- 9.9	41	301	23.3
600----	29	4,210	-13.8	40	304	28.6
550----	29	4,861	-18.3	39	302	30.9
500----	29	5,571	-23.1	40	299	32.3
450----	29	6,329	-28.5	38	303	35.6
400----	29	7,168	-34.8		303	41.6
350----	29	8,088	-41.3		304	45.7
300----	29	9,120	-48.4		301	48.6
250----	29	10,300	-55.6		300	58.3
200----	29	11,704	-60.2		302	56.5
175----	29	12,540	-58.7		295	51.1
150----	29	13,512	-57.6		293	46.4
125----	28	14,666	-58.1		294	42.0
100----	28	16,068	-59.3		297	31.3
80-----	28	17,462	-59.9		296	24.7
60-----	25	19,256	-59.9		308	14.4
50-----	24	20,401	-59.0		330	13.6
40-----	22	21,805	-58.4		346	11.5
30-----	20	23,613	-58.0		339	10.9
25-----	18	24,755	-58.6		341	11.7
20-----	14	26,162	-57.8		326	11.7
15-----	11	27,968	-56.3		299	22.2
10-----	[illegible]	30,546	-53.7			

MIAMI, FLA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	4	16.3	85		0.0
1,000--	29	135	17.0	79	181	.6
950----	29	572	15.0	74	195	4.7
900----	29	1,030	12.7	70	227	10.5
850----	29	1,509	11.5	53	238	14.4
800----	29	2,015	10.0	48	242	17.3
750----	29	2,547	7.8	40	249	19.2
700----	29	3,116	5.2		253	23.1
650----	29	3,713	2.2		253	26.8
600----	29	4,361	- 1.1		259	31.3
550----	29	5,041	- 5.1		258	34.4
500----	29	5,794	- 9.8		257	42.4
450----	29	6,595	-15.0		256	47.4
400----	29	7,482	-21.2		258	53.0
350----	28	8,459	-27.9		257	62.2
300----	28	9,548	-36.0		260	69.8
250----	28	10,790	-45.4		262	76.4
200----	28	12,249	-54.6		262	85.1
175----	28	13,094	-59.4		262	83.0
150----	28	14,048	-64.6		265	74.2
125----	27	15,145	-70.2		263	66.3
100----	27	16,451	-76.5		264	56.3
80-----	27	17,729	-78.1		262	45.9
60-----	25	19,397	-71.5		260	21.4
50-----	24	20,486	-66.3		259	11.7
40-----	24	21,859	-60.0		267	7.0
30-----	24	23,677	-54.9		351	1.9
25-----	24	24,850	-51.9		282	.6
20-----	21	26,302	-49.1		257	3.3
15-----	17	28,214	-45.0		257	13.6
10-----	11	30,956	-39.8			

MIDLAND, TEX. (913 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	871	0.7	73	327	2.9
1,000--	29	139				
950----	29	556				
900----	29	995	1.6	64	354	4.3
850----	29	1,458	3.5	50	293	7.8
800----	29	1,950	2.4	42	296	15.5
750----	29	2,467	- .3	39	287	23.5
700----	29	3,019	- 3.6	39	284	26.0
650----	29	3,597	- 7.6	39	281	29.7
600----	29	4,219	-11.4	37	276	34.0
550----	29	4,878	-15.3		277	38.5
500----	28	5,601	-19.7	36	267	43.1
450----	27	6,374	-25.1			
400----	27	7,225	-31.2			
350----	27	8,158	-38.0			
300----	27	9,205	-44.8			
250----	27	10,408	-50.9			
200----	22	11,842	-54.1			
175----	20	12,698	-55.0			
150----	19	13,678	-57.6			
125----	19	14,821	-60.8			
100----	14	16,196	-64.8			
80-----	10	17,556	-64.8			
60-----	8	19,327	-64.0			
50-----	[illegible]	20,457	-61.2			
40-----	8	21,854	-58.4			
30-----	7	23,676	-56.2			
25-----	6	24,842	-54.0			
20-----	5	26,300	-52.3			
15-----	5	28,175	-49.3			
10-----						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

FEBRUARY 1960

MONTGOMERY, ALA. (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	61	5.8	82	301	0.8
1,000	29	135	4.4	73	5	1.9
950	29	554	5.9	66	254	1.7
900	29	996	4.8	62	258	7.6
850	29	1,463	3.8	59	261	14.6
800	29	1,954	2.4	53	265	21.6
750	29	2,476	.6	44	262	25.6
700	29	3,027	- 1.7	40	259	30.3
650	29	3,613	- 4.8	39	257	36.5
600	29	4,239	- 8.3		255	42.9
550	29	4,911	-11.9		252	47.0
500	29	5,634	-16.2		249	52.5
450	29	6,414	-21.1		249	61.4
400	29	7,281	-27.5		250	64.7
350	29	8,228	-34.3		249	72.5
300	29	9,289	-41.8		252	82.0
250	29	10,506	-48.0		254	98.5
200	29	11,956	-54.4		259	104.7
175	29	12,807	-56.6		257	102.8
150	29	13,778	-59.9		257	89.8
125	29	14,906	-64.0		258	79.7
100	29	16,260	-67.6		258	59.1
80	29	17,599	-68.3		257	44.5
60	29	19,345	-64.3		260	28.0
50	28	20,469	-60.9		260	17.5
40	25	21,866	-57.5		254	14.6
30	24	23,692	-54.9		275	9.1
25	24	24,863	-52.9		276	7.6
20	22	26,312	-50.4		261	10.9
15	16	28,205	-47.6		266	15.0
10	6	30,953	-43.7			
7						
5						

NANTUCKET, MASS. (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	27	14	0.3	76	307	8.4
1,000	27	76			300	8.4
950	27	484	- .3	64	276	10.3
900	27	918	- 2.0	65	274	13.4
850	27	1,371	- 3.5	64	268	15.0
800	27	1,849	- 5.2	62	265	19.2
750	27	2,351	- 6.9	56	264	22.5
700	27	2,891	- 9.6	53	266	24.3
650	27	3,457	-12.3	48	267	29.0
600	27	4,069	-15.4	44	264	36.7
550	27	4,719	-18.8		263	36.7
500	27	5,427	-22.9		264	39.6
450	27	6,193	-28.6		264	45.1
400	27	7,024	-34.7		263	50.9
350	27	7,944	-41.0		265	54.6
300	27	8,980	-46.3		262	51.9
250	27	10,180	-50.6		260	53.2
200	27	11,626	-52.6		256	65.3
175	27	12,489	-52.4		260	58.7
150	27	13,486	-52.3		262	52.1
125	27	14,660	-54.9		257	45.7
100	27	16,075	-57.7		261	37.7
80	27	17,480	-58.3		258	29.9
60	26	19,296	-57.3		263	19.8
50	26	20,452	-56.4		268	14.8
40	26	21,872	-55.2		281	14.2
30	26	23,713	-54.2		278	16.7
25	24	24,884	-53.2		283	16.9
20	23	26,327	-51.9		277	16.1
15	21	28,194	-50.1		282	19.2
10	18	30,883	-45.0		270	36.1
7	10	33,254	-40.7			
5						

NASHVILLE, TENN. (995 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	177	- 1.1	91	330	1.7
1,000	29	138				
950	29	548	.2	70	304	5.6
900	29	983	- .6	66	299	8.4
850	29	1,439	- 1.3	63	290	13.0
800	29	1,922	- 2.8	62	280	15.9
750	29	2,432	- 4.5	59	268	17.3
700	29	2,974	- 6.6	57	268	22.3
650	29	3,548	- 9.4	56	266	25.6
600	29	4,166	-12.5	49	263	33.4
550	29	4,819	-16.7	51	262	36.1
500	29	5,537	-21.3	48	260	42.4
450	29	6,300	-26.2	45	257	49.5
400	29	7,151	-31.7	42	253	60.0
350	29	8,083	-38.1		253	71.3
300	28	9,122	-45.4		249	73.4
250	27	10,314	-51.6		252	86.7
200	26	11,744	-54.8		255	91.1
175	26	12,597	-55.6		258	84.1
150	26	13,577	-56.5		251	73.8
125	24	14,728	-59.0		249	71.5
100	23	16,120	-62.2		253	56.7
80	22	17,499	-62.6		251	47.8
60	20	19,283	-60.0		265	24.7
50	19	20,432	-57.0		256	14.8
40	15	21,855	-56.4		271	17.5
30	15	23,689	-55.2		307	5.8
25	12	24,860	-53.8			
20	11	26,305	-53.0			
15	8	28,172	-49.9			
10						
7						
5						

N. Y. INT. AP, IDLEWILD (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	5	0.5	68	303	7.0
1,000	29	92			306	11.7
950	29	503	- 1.5	64	293	9.3
900	29	932	- 2.9	66	288	11.3
850	29	1,384	- 3.8	60	279	16.7
800	29	1,861	- 5.3	59	277	19.4
750	29	2,365	- 7.4	54	270	23.3
700	29	2,901	- 9.8	46	269	27.8
650	29	3,470	-12.7	43	267	32.8
600	29	4,077	-15.6	35	268	38.5
550	29	4,727	-19.5	33	266	44.1
500	29	5,431	-24.3		265	50.5
450	29	6,187	-29.3		266	59.1
400	29	7,023	-34.8		267	64.5
350	29	7,943	-40.7		268	75.2
300	29	8,979	-46.6		270	83.9
250	29	10,176	-51.2		269	87.8
200	29	11,619	-53.1		269	77.7
175	29	12,479	-53.3		271	71.9
150	29	13,471	-54.1		268	64.1
125	29	14,637	-55.9		271	51.5
100	29	16,049	-58.6		273	40.8
80	28	17,450	-59.7		271	32.1
60	27	19,252	-58.6		270	19.2
50	27	20,401	-57.5		265	16.9
40	27	21,814	-56.8		274	17.3
30	27	23,643	-55.7		276	14.8
25	27	24,807	-54.5		267	15.3
20	27	26,239	-53.4		270	15.5
15	27	28,101	-51.4		275	19.0
10	19	30,745	-47.1		273	27.2
7	12	33,142	-45.0			
5	5	35,389	-43.3			

NOME, ALASKA (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	7	-12.2	78	137	12.0
1,000	29	62			125	6.6
950	[illegible]	[illegible]	- 9.2	65	146	7.2
900	29	877	- 9.9	63	145	7.4
850	29	1,318	-11.0	65	149	8.9
800	29	1,782	-12.7	59	155	9.9
750	29	2,272	-14.8	54	[illegible]	9.5
700	29	2,794	-17.5	48	159	8.5
650	29	3,350	-20.1	45	165	7.2
600	29	3,941	-23.6	[illegible]	170	10.5
550	[illegible]	4,568	-28.2	45	178	10.3
500	29	5,249	-32.5		180	10.7
450	29	5,976	-37.6		171	13.4
400	29	6,781	-43.0		178	17.7
350	29	7,671	-48.3		179	14.8
300	29	8,676	-52.5		188	19.2
250	29	9,848	-54.4		187	17.3
200	29	11,282	-52.6		204	17.1
175	28	12,146	-50.2		198	15.3
150	27	13,155	-49.4		202	14.0
125	25	14,350	-49.5		202	13.0
100	25	15,813	-49.4		215	11.3
80	25	17,276	-49.8		220	12.6
60	25	19,157	-49.9		224	14.2
50	26	20,349	-49.8		225	15.5
40	23	21,802	-50.4		244	16.9
30	21	23,681	-51.4			
25	18	24,889	-51.2			
20	12	26,413	-51.4			
15	8	28,232	-53.4			
10						
7						
5						

NORFOLK, VA. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	9	2.8	72	303	4.1
1,000	29	126	2.9	64	307	5.2
950	29	539	2.0	58	292	11.1
900	29	977	.9	53	292	15.5
850	29	1,436	.1	49	282	19.2
800	29	1,921	- 1.0	41	269	23.7
750	29	2,434	- 2.9		267	29.7
700	29	2,979	- 5.0	35	263	36.7
650	29	3,557	- 7.3	38	262	42.9
600	29	4,179	-11.0		263	48.8
550	29	4,841	-15.0		260	52.3
500	29	5,558	-19.4		259	60.8
450	29	6,327	-24.3		262	69.0
400	29	7,183	-30.2		263	77.3
350	29	8,119	-37.0		264	80.2
300	29	9,170	-44.4		266	90.3
250	29	10,373	-51.3		268	104.1
200	29	11,807	-54.8		270	107.6
175	29	12,661	-55.3		270	98.9
150	29	13,642	-56.8		271	79.5
125	29	14,789	-60.3		267	65.1
100	29	16,170	-63.3		268	55.2
80	29	17,540	-63.5		269	40.8
60	29	19,321	-60.3		275	20.8
50	28	20,466	-58.0		269	16.1
40	27	21,877	-56.5		286	12.2
30	27	23,711	-54.7		286	9.9
25	26	24,879	-53.9		295	15.3
20	26	26,318	-52.3		281	17.9
15	26	28,192	-49.2		285	22.0
10	22	30,878	-43.3		271	36.9
7	16	33,281	-41.1		272	45.3
5	5	35,676	-38.6			

NORTH PLATTE, NEBR. (917 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	848	- 9.4	79	330	2.5
1,000	29	170				
950	29	570				
900	29	991	- 8.0	74	332	4.7
850	29	1,437	- 6.8	71	338	6.4
800	29	1,909	- 8.0	68	325	8.5
750	29	2,404	- 9.8	65	312	11.7
700	29	2,940	-12.2	59	296	12.0
650	29	3,499	-15.0	59	302	14.2
600	29	4,106	-18.6	58	297	17.9
550	29	4,743	-22.4	53	294	22.5
500	29	5,444	-27.2	48	292	25.1
450	29	6,184	-32.6	46	285	26.0
400	29	7,015	-38.9		282	31.1
350	29	7,919	-45.2		282	30.7
300	29	8,933	-51.9		280	31.9
250	29	10,103	-56.1		286	35.0
200	29	11,522	-55.3		282	33.2
175	29	12,378	-53.7		281	30.3
150	29	13,370	-53.6		279	32.4
125	29	14,542	-53.9		277	28.2
100	28	15,967	-56.0		277	25.8
80	28	17,384	-57.4		277	18.1
60	27	19,199	-58.1		279	13.6
50	27	20,349	-57.7		269	11.7
40	25	21,763	-57.0		276	9.1
30	22	23,596	-56.8		263	11.9
25	17	24,759	-56.0		271	12.2
20	17	26,179	-55.9		279	12.6
15	14	28,022	-54.3		276	16.1
10	8	30,604	-52.5			
7						
5						

OAKLAND, CALIF (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	6	8.7	83	113	0.6
1,000	29	165	10.1	69	198	.6
950	29	587	8.5	62	297	3.1
900	29	1,037	6.4	59	305	6.2
850	29	1,504	4.5	52	297	8.7
800	29	1,996	2.3	42	293	12.4
750	29	2,511	- .3	41	300	16.1
700	29	3,065	- 3.3	36	302	20.4
650	29	3,642	- 6.8		305	23.5
600	29	4,269	-10.6		303	26.6
550	29	4,924	-15.0		301	31.3
500	29	5,648	-20.0		300	37.9
450	29	6,411	-25.2		298	45.3
400	29	7,269	-31.3		298	52.7
350	29	8,203	-37.9		299	56.3
300	29	9,250	-45.0		300	63.7
250	29	10,446	-53.7		300	72.3
200	29	11,854	-60.7		301	69.4
175	28	12,683	-60.8		302	67.8
150	28	13,645	-59.7		298	64.3
125	28	14,782	-61.0		297	55.8
100	27	16,161	-63.1		300	43.3
80	27	17,525	-64.4		300	30.9
60	25	19,293	-62.4		305	20.0
50	25	20,422	-61.0		313	14.4
40	23	21,809	-59.9		320	9.1
30	20	23,613	-58.1		325	8.0
25	20	24,763	-56.9		313	9.1
20	19	26,182	-55.6		295	12.2
15	15	28,014	-53.9		279	23.1
10	8	30,695	-48.7			
7						
5						

OKLAHOMA CITY, OKLA. (970 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	392	- 2.0	85	11	4.7
1,000	29	146				
950	29	554	- 2.4	71	20	5.4
900	29	987	- .8	58	321	3.5
850	29	1,444	- 1.1	56	295	9.3
800	29	1,927	- 2.6	54	279	13.8
750	29	2,435	- 4.4	54	270	18.5
700	29	2,979	- 7.1	53	273	19.6
650	29	3,545	-10.5	51	270	22.9
600	29	4,165	-14.2	48	268	25.6
550	29	4,813	-18.5	46	264	29.7
500	29	5,524	-23.2	46	264	34.6
450	29	6,279	-28.4	40	261	41.6
400	29	7,124	-34.1		262	49.0
350	29	8,048	-40.2		263	58.7
300	29	9,084	-47.1		259	71.3
250	29	10,273	-53.7		262	75.2
200	27	11,699	-55.0		262	81.2
175	27	12,552	-55.0		262	73.1
150	27	13,536	-56.0		264	68.2
125	27	14,692	-57.7		262	62.8
100	26	16,091	-61.2		262	48.2
80	25	17,472	-62.0		260	36.3
60	24	19,253	-61.0		259	24.1
50	22	20,396	-58.8		259	17.7
40	20	21,805	-57.3		261	10.7
30	16	23,640	-55.6		259	10.9
25	14	24,800	-54.8		269	11.9
20	8	26,261	-53.4			
15	5	28,105	-52.2			
10						
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OMAHA, NEBR. (970 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	403	- 9.4	81	348	5.8
1,000	29	162				
950	29	561	- 8.7	76	350	7.6
900	29	980	- 6.7	65	358	9.3
850	29	1,426	- 7.2	56	342	8.7
800	29	1,898	- 7.9	48	320	8.9
750	29	2,397	- 9.8	51	299	12.4
700	29	2,928	-12.3	52	299	13.0
650	29	3,488	-15.5	56	292	14.2
600	29	4,092	-18.8	53	294	15.9
550	29	4,732	-22.5	46	289	19.0
500	29	5,430	-27.1	41	288	21.8
450	29	6,179	-32.0	42	284	26.4
400	29	7,004	-37.9		273	29.1
350	29	7,911	-44.3		270	32.3
300	29	8,929	-51.1		269	36.3
250	29	10,101	-55.4		268	37.9
200	29	11,522	-55.4		266	38.7
175	29	12,379	-52.8		265	38.3
150	29	13,376	-52.3		265	35.0
125	29	14,552	-53.5		264	33.0
100	28	15,987	-55.4		265	27.6
80	28	17,404	-57.1		267	21.4
60	25	19,219	-57.2		263	14.8
50	25	20,372	-57.0		261	13.4
40	24	21,784	-56.6		268	11.9
30	20	23,607	-56.5		262	13.8
25	16	24,756	-57.1		259	15.9
20	15	26,167	-56.7		263	21.6
15	13	27,982	-56.6		260	23.7
10	10	30,560	-54.1			
7						
5						

PEORIA, ILL. (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	201	- 5.8	80	330	2.3
1,000	29	139				
950	29	542	- 5.1	73	340	5.4
900	29	966	- 5.5	67	314	7.8
850	29	1,415	- 5.7	61	305	11.5
800	29	1,889	- 7.1	56	297	12.8
750	29	2,388	- 9.3	53	283	14.6
700	29	2,922	-11.5	55	280	16.5
650	29	3,484	-14.3	54	279	19.4
600	29	4,091	-17.6	56	272	24.1
550	29	4,735	-21.5	51	270	27.0
500	29	5,434	-26.1	49	271	32.3
450	29	6,181	-31.3	44	269	36.5
400	29	7,014	-36.9		269	43.3
350	29	7,927	-43.1		267	46.8
300	29	8,951	-49.6		262	54.2
250	29	10,132	-53.5		260	55.2
200	29	11,566	-53.5		259	56.7
175	29	12,426	-53.0		259	54.6
150	29	13,422	-52.8		257	52.5
125	28	14,597	-53.9		260	46.4
100	26	16,028	-56.4		257	38.1
80	25	17,438	-57.7		259	29.7
60	23	19,248	-57.8		267	20.6
50	23	20,401	-57.0		261	17.7
40	21	21,812	-56.5		265	16.5
30	21	23,642	-55.9		272	17.1
25	20	24,801	-55.7		276	18.1
20	18	26,224	-55.3		271	19.8
15	15	28,065	-53.2		268	28.8
10	[illegible]	30,595	-51.9			
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PITTSBURGH, PA. (972 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	353	- 3.6	73	271	4.3
1,000	29	128				
950	29	535	- 3.5	68	264	8.5
900	29	960	- 5.4	71	261	15.5
850	29	1,408	- 6.7	69	272	18.5
800	29	1,881	- 7.7	63	273	21.0
750	29	2,382	- 9.2	56	268	22.0
700	29	2,914	-11.4	52	273	27.6
650	29	3,481	-13.2	51	273	32.1
600	29	4,088	-16.0	48	270	36.1
550	29	4,737	-19.9	47	267	42.7
500	29	5,440	-24.8	44	267	44.5
450	29	6,196	-30.2	47	264	47.0
400	29	7,029	-35.9	51	262	51.5
350	29	7,945	-41.9		260	60.8
300	29	8,977	-47.3		259	73.3
250	29	10,169	-52.2		259	71.5
200	29	11,607	-53.1		257	77.3
175	29	12,468	-52.9		257	72.9
150	29	13,462	-53.6		253	62.2
125	29	14,629	-55.6		253	58.1
100	28	16,039	-57.3		254	42.9
80	26	17,451	-57.9		251	23.3
60	26	19,262	-57.9		260	19.6
50	26	20,414	-56.7		264	12.0
40	25	21,831	-56.8		276	7.8
30	24	23,665	-55.2		302	9.7
25	23	24,826	-55.0		302	8.9
20	22	26,248	-53.9		294	12.4
15	19	28,109	-51.7		279	17.1
10	11	30,761	-46.3			
7						
5						

POINT ARGUELLO, CALIF. (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	22	113	8.8	90	358	1.9
1,000	22	176	10.3	80	348	2.7
950	22	592	10.1	62	344	8.5
900	22	1,042	8.3	55	322	9.7
850	22	1,512	6.7	44	316	14.2
800	22	2,008	4.5	38	308	16.7
750	22	2,535	1.5	39	307	18.5
700	22	3,083	- 1.5		299	22.3
650	22	3,668	- 4.8		297	25.8
600	22	4,295	- 8.4		295	29.5
550	22	4,960	-12.8		292	33.2
500	22	5,686	-17.1		293	40.0
450	22	6,463	-22.4		293	45.3
400	22	7,324	-28.3		291	50.3
350	22	8,269	-34.7		292	51.9
300	22	9,329	-42.6		290	63.0
250	22	10,537	-51.7		292	62.8
200	22	11,958	-59.3		288	78.3
175	22	12,792	-60.4		286	80.6
150	21	13,746	-61.6		288	77.1
125	21	14,872	-63.7		288	63.3
100	19	16,223	-66.2		284	50.5
80	17	17,560	-67.0		289	34.4
60	17	19,304	-64.9		295	23.1
50	16	20,423	-62.2		298	18.8
40	14	21,811	-60.2		309	9.9
30	13	23,618	-57.5		298	11.5
25	13	24,773	-55.9		295	11.1
20	13	26,197	-54.1		269	9.3
15	13	28,050	-51.9		268	17.9
10	11	30,707	-47.4			
7	8	33,042	-46.3			
5	6	35,277	-44.6			

PORTLAND, ME. (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	20	- 5.2	86	331	3.3
1,000	28	84			360	4.5
950	28	490	- 3.5	66	314	4.1
900	28	916	- 5.0	69	300	4.7
850	28	1,364	- 6.1	69	287	6.0
800	28	1,838	- 7.8	71	273	8.2
750	28	2,339	- 9.5	68	267	12.8
700	28	2,869	-11.5	63	266	17.5
650	28	3,424	-14.1	59	265	22.5
600	28	4,039	-17.6	56	268	25.5
550	28	4,683	-21.4	50	271	29.1
500	28	5,383	-25.9	47	272	33.2
450	27	6,124	-31.2	39	273	38.1
400	27	6,956	-36.8		268	43.9
350	27	7,869	-42.7		266	50.5
300	27	8,900	-47.2		264	56.0
250	27	10,096	-50.8		264	54.8
200	27	11,546	-51.5		263	56.7
175	26	12,415	-51.5		264	49.7
150	26	13,417	-51.4		264	48.6
125	25	14,592	-53.1		264	41.6
100	24	16,015	-55.1		266	33.0
80	24	17,437	-56.0		268	27.2
60	24	19,266	-56.2		271	19.8
50	24	20,429	-55.5		276	18.7
40	24	21,852	-55.3		278	17.3
30	21	23,693	-54.9		276	15.9
25	20	24,860	-54.0		278	18.7
20	18	26,300	-52.5		275	23.9
15	17	28,171	-51.0		275	30.5
10	14	30,846	-47.0		268	35.6
7						
5						

RAPID CITY, S. DAK. (904 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	966	- 9.8	80	341	3.3
1,000	29	176				
950	29	577				
900	29	998			332	3.9
850	29	1,442	- 7.8	63	314	10.9
800	29	1,912	- 9.4	62	315	13.8
750	29	2,406	-11.4	61	315	16.7
700	29	2,937	-13.6	58	313	19.2
650	29	3,495	-16.7	55	307	20.0
600	29	4,095	-20.4	54	305	22.5
550	29	4,732	-24.2	52	300	23.5
500	29	5,424	-28.8	52	296	24.5
450	29	6,162	-34.2	48	293	25.5
400	29	6,986	-40.1		294	29.7
350	29	7,885	-46.6		294	30.9
300	29	8,894	-52.8		293	34.0
250	29	10,060	-56.3		294	33.6
200	29	11,478	-55.3		290	29.9
175	29	12,334	-53.4		288	29.9
150	29	13,327	-53.1		285	28.2
125	29	14,502	-53.1		[illegible]	25.1
100	29	15,937	-54.6		282	23.1
80	28	17,355	-56.1		279	18.8
60	26	19,179	-56.6		280	13.2
50	26	20,336	-56.8		283	10.1
40	24	21,751	-56.8		289	10.3
30	21	23,564	-57.1		286	8.7
25	20	24,716	-57.0		276	10.9
20	15	26,149	-56.0		283	13.6
15	9	28,009	-54.2			
10	7	30,634	-51.8			
7						
5						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

FEBRUARY 1960

ST. CLOUD, MINN (981 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	316	-13.2	77	295	3.9
1,000--	29	165				
950----	29	558	-10.5	70	360	3.7
900----	29	975	- 9.2	[illegible]	13	3.9
850----	29	1,417	- 9.7	51	341	5.2
800----	29	1,884	-11.1	[illegible]	336	6.4
750----	29	2,375	-13.1	50	324	6.2
700----	29	2,900	-15.8	48	313	7.6
650----	29	3,452	-18.9	44	306	8.5
600----	29	4,048	-22.2	45	301	10.5
550----	29	4,678	-25.6	42	292	13.8
500----	29	5,370	-29.7	39	279	16.3
450----	29	6,108	-34.7		276	15.9
400----	29	6,928	-40.5		271	15.7
350----	29	7,824	-46.7		266	16.1
300----	29	8,835	-52.3		267	18.3
250----	29	10,006	-55.1		262	23.7
200----	29	11,434	-53.6		263	25.5
175----	27	12,295	-52.0		262	23.9
150----	27	13,296	-51.2		261	22.5
125----	27	14,480	-52.1		260	20.4
100----	27	15,921	-53.6		261	20.2
80-----	26	17,351	-55.1		252	18.1
60-----	24	19,180	-55.5		262	13.0
50-----	24	20,342	-55.7		255	8.7
40-----	21	21,757	-56.5		260	10.3
30-----	17	23,571	-56.2		265	13.8
25-----	14	24,735	-56.3			
20-----	10	26,140	-55.8			
15-----	9	27,977	-53.8			
10-----						

ST. PAUL IS., ALASKA (996 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	10	- 3.1	86	119	7.2
1,000--	29	-20				
950----	29	384	- 5.5	82	48	7.6
900----	29	806	- 7.6	77	71	5.1
850----	29	1,250	- 9.3	72	76	4.1
800----	29	1,717	-11.2	63	51	4.3
750----	29	2,208	-13.8	56	48	2.7
700----	29	2,732	-17.0	50	63	1.0
650----	29	3,283	-20.1	48	150	1.4
600----	29	3,874	-24.0	44	325	.8
550----	29	4,498	-28.3	43	231	4.7
500----	29	5,182	-33.1		240	8.2
450----	29	5,909	-38.4		256	5.2
400----	29	6,716	-43.6			.0
350----	29	7,605	-48.6			
300----	28	8,610	-53.0			
250----	28	9,782	-53.5			
200----	28	11,226	-51.0			
175----	26	12,085	-49.3			
150----	26	13,099	-48.1			
125----	26	14,302	-47.9			
100----	25	15,774	-48.3		188	7.0
80-----	24	17,235	-48.7		181	8.9
60-----	22	19,128	-48.7		193	7.8
50-----	22	20,325	-49.1		181	5.4
40-----	21	21,791	-48.9		227	6.6
30-----	16	23,685	-49.0			
25-----	12	24,919	-49.4			
20-----	11	26,401	-50.8			
15-----	7	28,294	-51.7			
10-----						

SALEM, OREG. (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	61	3.9	84	195	5.8
1,000--	29	154			204	5.2
950----	29	570	3.7	67	216	8.5
900----	29	1,009	1.2	65	227	11.7
850----	29	1,467	- 1.7	66	244	12.4
800----	29	1,948	- 4.1	63	258	14.6
750----	29	2,453	- 6.0	54	276	16.9
700----	28	3,000	- 8.7	43	288	18.1
650----	28	3,565	-12.0	42	299	18.8
600----	28	4,179	-15.6	40	305	25.5
550----	28	4,827	-19.7	38	307	29.0
500----	28	5,531	-24.2	36	307	31.7
450----	28	6,285	-30.0		306	36.1
400----	28	7,119	-36.4		307	37.5
350----	28	8,031	-43.4		307	42.6
300----	28	9.054	-49.7		311	47.2
250----	28	10,229	-56.5		305	50.9
200----	27	11,630	-58.8		304	49.4
175----	27	12,470	-57.8		299	45.1
150----	26	13,445	-56.0		303	38.5
125----	24	14,588	-56.2		300	32.8
100----	24	16,005	-56.4		304	27.8
80-----	23	17,415	-59.0		300	20.0
60-----	22	19,226	-57.9		309	13.2
50-----	22	20,376	-57.8		313	10.7
40-----	21	21,790	-57.3		330	10.9
30-----	16	23,609	-57.0		341	11.1
25-----	16	24,763	-57.1		334	10.3
20-----	13	26,190	-56.4		324	11.3
15-----	9	28,054	-55.0			
10-----	6	30,625	-53.7			

SALT LAKE CITY, UTAH (872 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,288	- 3.6	80	163	8.0
1,000--	29	192				
950----	29	598				
900----	29	1,032				
850----	29	1,489	- 2.6	69	171	5.8
800----	29	1,969	- 4.6	64	203	3.9
750----	29	2,473	- 7.7	65	284	8.5
700----	29	3,008	-10.9	67	296	15.0
650----	29	3,572	-14.2	65	305	19.6
600----	29	4,177	-17.8	58	308	20.6
550----	29	4,819	-21.5	52	303	26.8
500----	29	5,521	-26.0	52	304	30.3
450----	29	6,270	-31.2	50	301	32.8
400----	29	7,103	-36.6		303	38.5
350----	29	8,016	-42.9		301	42.4
300----	29	9,041	-49.3		302	43.9
250----	29	10,221	-54.6		300	45.9
200----	29	11,639	-56.5		304	46.8
175----	29	12,487	-56.0		296	48.8
150----	27	13,463	-55.1		294	40.2
125----	27	14,628	-55.1		290	36.5
100----	26	16,051	-57.6		287	31.7
80-----	24	17,460	-58.5		293	19.0
60-----	23	19,265	-58.6		292	12.2
50-----	21	20,407	-58.5		299	6.6
40-----	20	21,813	-57.6		293	9.7
30-----	18	23,630	-57.6		314	8.0
25-----	14	24,785	-56.9		286	7.8
20-----	12	26,202	-55.3		273	12.4
15-----	10	28,055	-53.9		280	16.5
10-----	8	30,697	-51.0			

SAN ANTONIO, TEX. (987 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	243	5.9	80	356	6.4
1,000--	29	135				
950----	29	559	7.7	69	56	1.6
900----	29	1,003	7.8	58	238	4.3
850----	29	1,474	6.1	54	252	10.7
800----	29	1,970	4.2	45	257	14.2
750----	29	2,489	1.3	42	267	15.2
700----	29	3,046	- 1.5	36	280	16.9
650----	29	3,629	- 4.6		272	23.5
600----	29	4,260	- 7.9	38	257	34.0
550----	29	4,926	-12.1		258	35.8
500----	29	5,656	-17.1		254	44.5
450----	29	6,432	-22.1		262	46.4
400----	29	7,296	-28.0			
350----	29	8,242	-34.5			
300----	29	9,304	-41.5			
250----	29	10,524	-47.5			
200----	28	11,975	-53.6			
175----	27	12,828	-56.4			
150----	26	13,800	-60.1			
125----	17	14,914	-63.5			
100----	12	16,264	-67.7			
80-----	6	17,606	-69.0			
60-----	6	19,331	-66.4			
50-----	6	20,445	-62.0			
40-----	5	21,842	-56.5			
30-----						
25-----						
20-----						
15-----						
10-----						

SAN DIEGO, CALIF. (1003 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	124	8.2	87	37	0.6
1,000--	29	151			61	2.9
950----	29	575	10.1	62	300	3.1
900----	29	1,028	8.0	54	316	6.4
850----	29	1,498	6.1	46	306	11.1
800----	29	1,994	4.1	40	306	14.4
750----	29	2,512	1.3	38	306	18.1
700----	29	3,070	- 1.9	38	306	23.5
650----	29	3,652	- 4.7	33	307	28.6
600----	29	4,283	- 8.3	31	305	34.0
550----	29	4,948	-12.6		302	38.1
500----	29	5,677	-17.3		299	44.1
450----	29	6,452	-22.9		298	47.8
400----	29	7,314	-28.8		298	51.7
350----	29	8,258	-35.1		304	52.5
300----	29	9,316	-42.8		307	61.2
250----	29	10,525	-51.0		303	74.2
200----	28	11,953	-57.6		294	74.2
175----	27	12,795	-59.0		292	76.2
150----	26	13,764	-60.3		292	73.8
125----	26	14,893	-63.7		286	61.2
100----	24	16,247	-67.3		282	49.2
80-----	17	17,572	-67.0		287	37.7
60-----	12	19,311	-64.4			
50-----	11	20,434	-61.8		287	14.6
40-----	11	21,819	-59.5		284	7.4
30-----	11	23,626	-57.0		262	3.7
25-----	11	24,783	-55.7		250	4.7
20-----	11	26,213	-53.3			
15-----	10	28,045	-51.7			
10-----	9	30,696	-47.5			
7------	5	33,112	-44.5			

SAN JUAN, P. R. (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	6	21.5	89	157	0.6
1,000--	29	139	23.5	73	100	4.7
950----	29	588	20.8	75	95	11.7
900----	29	1,052	17.8	71	93	10.3
850----	29	1,540	15.2	67	86	10.9
800----	29	2,052	12.6	61	78	7.2
750----	29	2,594	10.6	47	62	3.3
700----	29	3,165	8.1	38	14	.6
650----	29	3,772	5.6		26	1.0
600----	29	4,426	2.8		358	.6
550----	29	5,123	- .9		279	2.9
500----	29	5,880	- 5.5		310	4.1
450----	29	6,693	-11.5		315	9.3
400----	29	7,590	-18.0		291	11.5
350----	29	8,572	-26.0		297	15.0
300----	29	9,667	-34.7		303	21.2
250----	29	10,915	-43.9		294	28.0
200----	29	12,378	-54.7		291	28.2
175----	29	13,220	-60.4		303	30.1
150----	29	14,166	-66.6		294	22.2
125----	29	15,253	-72.6		298	16.3
100----	29	16,542	-79.0		301	11.5
80-----	29	17,802	-80.1		312	10.1
60-----	29	19,454	-72.0		316	9.1
50-----	29	20,544	-66.2		312	7.6
40-----	29	21,917	-60.1		325	8.7
30-----	26	23,744	-54.2		326	3.5
25-----	22	24,923	-51.6		70	2.9
20-----	7	26,389	-46.7			
15-----						
10-----						
7------						

SANTA MONICA, CALIF. (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	38	10.4	72	355	3.1
1,000--	29	156	11.4	63	[illegible]	2.9
950----	29	580	9.8	57	354	3.3
900----	29	1,032	8.1	50	329	5.6
850----	29	1,502	6.1	40	314	9.1
800----	29	1,997	3.7	35	305	12.8
750----	29	2,515	.8	32	307	17.9
700----	29	3,070	- 2.2	33	307	23.5
650----	29	3,649	- 5.4	30	306	28.8
600----	29	4,280	- 9.4	32	307	32.4
550----	29	4,936	-13.7		303	35.0
500----	29	5,666	-18.6		305	39.2
450----	29	6,432	-23.6		305	46.6
400----	29	7,298	-29.5		306	48.6
350----	29	8,237	-36.3		303	55.2
300----	29	9,290	-43.7		304	64.9
250----	29	10,493	-52.1		306	74.2
200----	29	11,912	-59.0		303	76.4
175----	28	12,742	-59.1		299	78.3
150----	27	13,710	-60.1		299	76.7
125----	27	14,841	-62.7		297	64.5
100----	27	16,205	-66.2		296	55.2
80-----	23	17,551	-67.3		297	42.7
60-----	21	19,287	-64.9		299	22.2
50-----	20	20,405	-62.6		297	16.5
40-----	19	21,788	-60.2		308	12.0
30-----	19	23,592	-57.6		289	6.6
25-----	18	24,746	-56.0		271	11.9
20-----	17	26,174	-53.9		285	19.0
15-----	14	28,019	-51.7		267	16.3
10-----	13	30,678	-47.2		294	17.5
7------	6	33,079	-44.2			

SAULT STE. MARIE, MICH. (988 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	221	-10.1	83	353	4.1
1,000--	29	129				
950----	29	527	- 9.5	77	358	4.5
900----	29	943	- 9.7	74	350	6.6
850----	29	1,384	-10.0	71	347	8.0
800----	29	1,851	-10.9	65	336	8.2
750----	29	2,346	-12.5	64	330	8.9
700----	29	2,870	-14.9	58	322	10.3
650----	29	3,427	-17.8	53	312	10.3
600----	29	4,022	-21.2	52	300	13.0
550----	29	4,655	-25.2	50	289	15.2
500----	29	5,345	-29.9	45	284	16.5
450----	29	6,082	-35.1		274	16.7
400----	29	6,900	-40.9		273	20.2
350----	29	7,796	-47.3		263	23.3
300----	29	8,803	-52.6		260	26.2
250----	29	9,975	-54.1		260	28.4
200----	29	11,409	-52.8		260	26.2
175----	29	12,272	-51.9		263	29.1
150----	29	13,272	-51.5		258	27.6
125----	28	14,455	-52.3		260	24.1
100----	26	15,886	-54.0		259	20.4
80-----	26	17,312	-55.5		259	18.1
60-----	24	19,144	-56.2		267	12.6
50-----	23	20,301	-56.2		269	11.3
40-----	21	21,715	-56.4		269	9.9
30-----	21	23,541	-56.0		271	7.8
25-----	17	24,700	-56.4		273	9.9
20-----	13	26,124	-55.9		280	15.0
15-----	12	27,960	-55.3		275	25.3
10-----	7	30,463	-55.8			
7------						

SEATTLE, WASH. (1002 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	125	3.7	77	132	5.1
1,000--	29	141			139	5.1
950----	29	556	3.0	65	172	7.6
900----	29	994	.4	65	216	7.2
850----	29	1,450	- 2.6	66	226	10.1
800----	29	1,929	- 5.3	64	242	10.7
750----	29	2,431	- 7.9	57	258	11.7
700----	29	2,967	-10.4	52	276	14.6
650----	29	3,530	-13.5	54	288	17.9
600----	29	4,140	-17.3	54	293	19.8
550----	29	4,782	-21.3	48	299	23.1
500----	29	5,484	-25.7	44	301	27.2
450----	29	6,229	-31.2	41	301	33.2
400----	29	7,064	-37.4		306	36.5
350----	29	7,973	-43.9		308	40.4
300----	29	8,994	-50.2		306	44.7
250----	29	10,168	-56.1		303	47.4
200----	29	11,580	-56.8		304	43.3
175----	29	12,426	-56.1		304	37.5
150----	29	13,410	-54.6		298	30.5
125----	28	14,579	-54.7		295	25.8
100----	28	16,006	-55.4		296	22.3
80-----	28	17,426	-56.5		298	17.5
60-----	27	19,250	-56.5		315	12.8
50-----	27	20,409	-56.3		322	10.9
40-----	24	21,819	-56.4		334	9.3
30-----	19	23,643	-56.7		1	9.9
25-----	18	24,797	-57.3		360	10.5
20-----	15	26,212	-57.9		19	10.5
15-----	6	28,033	-57.6			
10-----						
7------						

SHEMYA, ALASKA (992 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	26	37	[illegible]	80	312	9.3
1,000--	26	-25				
950----	26	376	- 4.1	80	325	14.6
900----	26	807	- 7.5	82	316	13.8
850----	26	1,249	-10.8	82	303	12.4
800----	26	1,712	-13.6	73	304	9.3
750----	26	2,198	-16.7	65	289	10.1
700----	26	2,717	-19.9	58	283	12.8
650----	26	3,260	-23.0	51	289	12.0
600----	26	3,846	-26.7	46	291	11.5
550----	26	4,465	-31.0	46	317	9.1
500----	26	5,139	-35.7		305	10.3
450----	26	5,859	-40.6		287	8.0
400----	26	6,659	-46.1		284	8.0
350----	26	7,537	-51.3		237	6.0
300----	26	8,527	-55.3		232	11.5
250----	26	9,691	-54.5		233	14.6
200----	25	11,135	-50.9		232	15.5
175----	25	12,007	-49.7		215	15.7
150----	25	13,019	-48.8		223	18.3
125----	25	14,219	-48.2		220	15.5
100----	25	15,689	-48.4		227	17.7
80-----	25	17,159	-49.1		220	15.3
60-----	24	19,058	-48.1		208	12.0
50-----	24	20,261	-48.3		197	12.0
40-----	24	21,732	-48.2		202	12.6
30-----	24	23,634	-47.7		196	9.1
25-----	23	24,837	-48.2		216	7.6
20-----	22	26,306	-48.3		227	8.5
15-----	20	28,190	-49.1		305	3.5
10-----	14	30,849	-50.1			

SHREVEPORT, LA. (1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	76	3.2	78	331	1.0
1,000--	29	134			357	2.7
950----	29	552	4.1	62	241	2.1
900----	29	991	4.1	47	259	6.8
850----	29	1,455	2.8	42	276	11.3
800----	29	1,944	.7	43	274	15.9
750----	29	2,457	- 2.1	41	274	17.1
700----	29	3,006	- 4.7	43	272	23.5
650----	29	3,582	- 7.4	43	270	28.2
600----	29	4,206	-11.0	43	264	34.8
550----	29	4,867	-14.9	42	258	40.8
500----	29	5,585	-19.6	43	257	45.3
450----	29	6,355	-24.6		257	54.6
400----	29	7,209	-30.3		259	61.6
350----	29	8,147	-36.2		253	64.5
300----	29	9,201	-43.3		255	77.1
250----	29	10,408	-50.2		256	90.9
200----	29	11,852	-53.6		255	97.7
175----	29	12,708	-55.2		253	95.0
150----	29	13,686	-57.7		256	86.7
125----	29	14,827	-61.4		257	75.0
100----	29	16,198	-65.2		257	58.1
80-----	29	17,549	-66.3		255	46.8
60-----	26	19,297	-63.0		254	24.5
50-----	24	20,427	-60.4		259	19.4
40-----	21	21,827	-56.8		253	14.6
30-----	21	23,653	-55.6		254	9.9
25-----	19	24,816	-54.3		263	9.9
20-----	18	26,254	-52.6		274	7.2
15-----	11	28,149	-49.0			
10-----						

SPOKANE, WASH. (932 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	722	- 2.2	80	159	2.9
1,000--	29	155				
950----	29	564				
900----	29	997	- 1.0	68	200	6.0
850----	29	1,452	- 3.3	62	232	6.4
800----	29	1,929	- 6.4	62	249	8.0
750----	29	2,429	- 9.3	61	265	10.1
700----	29	2,962	-12.1	60	272	12.2
650----	29	3,523	-14.9	52	281	14.0
600----	29	4,129	-18.2	49	290	17.7
550----	29	4,769	-22.3	48	299	19.4
500----	29	5,467	-26.9	47	300	22.7
450----	29	6,213	-32.3	45	304	25.5
400----	29	7,041	-38.1		307	27.2
350----	29	7,948	-44.4		316	31.7
300----	29	8,966	-50.8		308	36.3
250----	29	10,140	-55.8		307	41.0
200----	28	11,561	-56.1		305	38.7
175----	28	12,414	-54.9		308	35.0
150----	28	13,406	-53.5		304	30.5
125----	27	14,574	-53.3		305	25.6
100----	27	16,008	-54.4		307	21.4
80-----	27	17,431	-56.0		301	16.7
60-----	27	19,258	-56.2		318	10.9
50-----	27	20,417	-55.7		321	10.3
40-----	25	21,841	-56.2		332	6.6
30-----	23	23,662	-56.6		340	8.4
25-----	22	24,819	-56.5		344	9.5
20-----	18	26,242	-56.9		347	9.5
15-----	15	28,064	-56.5		332	7.4
10-----	7	30,661	-55.2			

SWAN ISLAND, W. I. (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	10	24.7	82	106	4.9
1,000--	29	116	23.7	82	95	6.4
950----	29	565	19.7	83	108	10.1
900----	29	1,027	16.6	80	118	10.7
850----	29	1,513	14.2	74	133	6.8
800----	29	2,024	12.3	56	165	3.9
750----	29	2,563	10.3	44	207	4.3
700----	29	3,135	7.3		209	6.2
650----	29	3,738	5.0		210	8.2
600----	29	4,393	1.9		229	8.5
550----	29	5,083	- 2.0		238	12.4
500----	29	5,842	- 6.5		236	12.4
450----	29	6,653	-12.4		238	14.6
400----	29	7,547	-19.0		242	19.2
350----	28	8,527	-26.8		246	21.0
300----	28	9,618	-35.7		246	28.0
250----	27	10,863	-44.9		239	37.3
200----	27	12,324	-55.1		251	42.7
175----	26	13,168	-60.9		262	38.5
150----	25	14,109	-67.3		260	33.0
125----	25	15,192	-73.4		266	23.3
100----	22	16,478	-78.5		263	14.0
80-----	21	17,747	-78.3		255	13.6
60-----	21	19,410	-73.1		274	13.8
50-----	21	20,493	-67.1		270	13.2
40-----	21	21,860	-60.8		294	12.0
30-----	20	23,675	-54.8		13	2.1
25-----	20	24,847	-52.2		90	6.0
20-----	17	26,281	-49.8		88	10.1
15-----	16	28,177	-46.1		101	19.8
10-----	8	30,893	-41.7			

TAMPA, FLA. (1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	8	12.1	84	11	1.7
1,000--	28	139	13.2	77	58	2.1
950----	28	573	12.1	70	197	5.1
900----	28	1,023	10.8	66	227	11.9
850----	28	1,499	9.4	56	240	16.5
800----	28	2,002	8.3	46	241	19.6
750----	28	2,536	6.6	40	245	21.4
700----	28	3,098	3.9	33	251	25.8
650----	28	3,695	.5		252	31.1
600----	28	4,335	- 3.2		253	35.0
550----	28	5,015	- 7.2		254	40.0
500----	28	5,757	-12.3		251	43.7
450----	28	6,550	-17.6		251	46.0
400----	27	7,429	-23.5		250	54.4
350----	27	8,394	-30.2			
300----	27	9,474	-38.1			
250----	27	10,706	-47.4			
200----	25	12,157	-55.6			
175----	24	13,003	-60.1			
150----	23	13,954	-64.8			
125----	19	15,053	-69.1			
100----	16	16,365	-74.3			
80-----	16	17,659	-75.0			
60-----	16	19,353	-68.4			
50-----	15	20,458	-64.4			
40-----	14	21,839	-59.8			
30-----	14	23,651	-55.8			
25-----	11	24,795	-53.9			
20-----	10	26,235	-50.4			
15-----	8	28,141	-46.4			
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	TATOOSH IS., WASH. (1013 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	31	6.3	76	130	3.7
1,000--	28	135			146	4.5
950----	28	547	3.0	71	161	5.6
900----	28	989	.1	72	209	5.8
850----	28	1,445	- 2.4	69	255	6.2
800----	27	1,925	- 5.2	62	269	6.0
750----	27	2,424	- 7.6	59	283	9.9
700----	27	2,964	-10.2	53	287	14.4
650----	27	3,526	-13.4	48	295	20.2
600----	27	4,138	-16.6	43	301	19.6
550----	27	4,779	-20.7	42	305	24.5
500----	27	5,484	-25.8	42	297	27.0
450----	27	6,228	-31.4	43	301	29.3
400----	27	7,063	-37.5		303	31.7
350----	27	7,972	-43.9		301	37.1
300----	27	8,991	-51.0		295	41.8
250----	27	10,159	-56.9		280	46.0
200----	26	11,566	-59.3		287	44.3
175----	24	12,405	-56.8		284	34.6
150----	24	13,386	-55.6		283	28.4
125----	24	14,550	-55.0		290	25.5
100----	23	15,978	-56.2		291	19.8
80-----	23	17,393	-57.0		284	15.7
60-----	22	19,210	-56.7		309	12.4
50-----	21	20,366	-56.7		313	8.7
40-----	18	21,782	-57.3		347	9.1
30-----	14	23,607	-57.7			
25-----	13	24,759	-57.7			
20-----	11	26,167	-58.2			
15-----	6	27,974	-59.6			
10-----	5	30,503	-59.9			
7------						
5------						

Standard pressure surface (mb.)	TOPEKA, KANS. (986 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	269	- 5.6	75	338	6.4
1,000--	29	157				
950----	29	561	- 5.9	72	339	6.2
900----	29	985	- 4.4	61	347	6.8
850----	29	1,435	- 3.4	59	329	7.0
800----	29	1,911	- 6.1	56	312	9.5
750----	29	2,414	- 8.2	54	301	11.1
700----	29	2,948	-10.8	57	293	12.4
650----	29	3,512	-13.8	55	293	13.0
600----	29	4,119	-16.8	49	286	18.5
550----	29	4,768	-20.9	47	278	23.5
500----	29	5,466	-25.6	43	276	29.5
450----	29	6,219	-30.5	43	271	33.2
400----	29	7,049	-36.3	45	270	38.3
350----	29	7,962	-43.2		266	44.1
300----	29	8,984	-50.0		268	48.2
250----	29	10,162	-54.8		264	50.9
200----	29	11,586	-55.0		264	45.7
175----	29	12,443	-53.5		266	48.2
150----	29	13,436	-53.4		264	46.6
125----	29	14,607	-54.6		262	40.2
100----	29	16,029	-57.1		265	34.2
80-----	29	17,433	-59.4		265	25.1
60-----	27	19,236	-58.7		265	16.9
50-----	26	20,380	-57.5		270	14.6
40-----	26	21,793	-56.8		268	13.6
30-----	26	23,621	-55.9		266	14.4
25-----	26	24,782	-55.7		269	17.7
20-----	26	26,204	-55.3		271	20.2
15-----	22	28,046	-53.6		272	26.0
10-----	19	30,662	-50.4		270	39.2
7------	11	33,047	-46.8			
5------	9	35,249	-44.6			

Standard pressure surface (mb.)	TUCSON, ARIZ. (925 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	781	3.5	62	163	5.6
1,000--	29	148				
950----	29	566				
900----	29	1,013	8.2	38	185	5.4
850----	29	1,483	5.9	35	247	4.7
800----	29	1,976	2.9	34	278	9.1
750----	29	2,493	.0	37	287	13.0
700----	29	3,046	- 3.2	38	289	18.8
650----	29	3,625	- 6.4	37	293	24.5
600----	29	4,252	- 9.8	34	295	30.7
550----	29	4,913	-14.0		293	34.8
500----	29	5,636	-18.7		294	40.0
450----	29	6,407	-23.8		299	45.5
400----	29	7,266	-29.8		297	52.5
350----	29	8,205	-36.3		293	54.2
300----	29	9,259	-43.4		289	60.8
250----	29	10,465	-51.2		293	68.6
200----	28	11,891	-56.6		289	82.6
175----	28	12,738	-56.5		285	79.9
150----	27	13,712	-58.6		281	75.0
125----	27	14,850	-61.6		281	75.2
100----	23	16,216	-65.4		281	49.2
80-----	19	17,565	-66.4		279	35.0
60-----	17	19,310	-65.3		276	27.2
50-----	16	20,431	-61.5		268	12.2
40-----	15	21,823	-59.1		280	8.7
30-----	12	23,641	-56.7		253	9.5
25-----	12	24,802	-54.8		262	11.9
20-----	12	26,235	-53.5		252	12.8
15-----	11	28,096	-51.5			
10-----	8	30,762	-47.0			
7------	6	33,118	-44.9			
5------						

Standard pressure surface (mb.)	WASHINGTON D. C. (1004 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	88	0.3	67	274	6.0
1,000--	29	118			295	6.0
950----	29	527	- .8	61	287	14.0
900----	29	959	- 2.5	60	295	17.5
850----	29	1,413	- 2.7	50	292	19.4
800----	29	1,892	- 4.1	45	285	21.2
750----	29	2,401	- 5.9	40	278	25.8
700----	29	2,938	- 7.8	42	274	29.9
650----	29	3,513	-10.1	39	268	37.1
600----	29	4,126	-13.0	36	266	42.7
550----	29	4,781	-16.6		264	48.2
500----	29	5,495	-21.2		262	55.2
450----	29	6,260	-26.5		262	64.7
400----	29	7,105	-32.2		262	69.2
350----	29	8,034	-38.9		263	74.8
300----	29	9,076	-45.9		266	71.3
250----	29	10,273	-51.7		271	79.9
200----	28	11,715	-53.8		274	82.2
175----	28	12,575	-53.4		270	80.2
150----	28	13,563	-55.1		269	67.6
125----	28	14,721	-57.6		267	56.7
100----	28	16,120	-60.9		266	47.6
80-----	27	17,499	-61.0		271	31.3
60-----	26	19,294	-58.7		278	22.5
50-----	26	20,442	-57.6		274	16.9
40-----	26	21,854	-56.3		278	13.8
30-----	24	23,685	-55.0		279	15.5
25-----	24	24,850	-54.6		283	16.9
20-----	23	26,282	-53.0		283	17.5
15-----	20	28,139	-50.2		285	14.8
10-----	13	30,748	-47.5			
7------	5	33,108	-43.3			
5------						

Standard pressure surface (mb.)	WINNEMUCCA, NEV. (869 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	25	1,310	- 1.9	77	166	1.4
1,000--	25	179				
950----	25	592				
900----	25	1,031				
850----	25	1,489	.3	60	193	3.1
800----	25	1,974	- 1.8	56	251	8.9
750----	25	2,480	- 5.1	59	264	13.4
700----	25	3,024	- 8.6	57	275	19.4
650----	25	3,589	-11.6	55	282	22.5
600----	25	4,205	-15.0	53	293	27.2
550----	25	4,848	-19.2	52	295	32.8
500----	25	5,561	-23.7	46	299	34.4
450----	25	6,312	-29.0		299	33.8
400----	25	7,155	-35.2		302	40.2
350----	25	8,073	-41.9		299	40.4
300----	25	9,102	-48.7		299	42.9
250----	25	10,282	-55.6		309	45.7
200----	25	11,689	-59.0			
175----	21	12,511	-56.3			
150----	20	13,477	-55.4			
125----	20	14,636	-57.0			
100----	19	16,042	-58.7			
80-----	17	17,435	-60.1			
60-----	16	19,236	-59.2			
50-----	15	20,372	-58.9			
40-----	13	21,774	-57.6			
30-----	12	23,587	-57.8			
25-----	11	24,740	-56.5			
20-----	5	26,137	-57.5			
15-----						
10-----						
7------						
5------						

Standard pressure surface (mb.)	YAKUTAT, ALASKA (1010 MB.)						YUCCA FLAT, NEV. (881 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	12	- 0.2	86	93	5.6	29	1,196	- 2.1	73	347	3.3
1,000--	29	91			99	3.9	29	177				
950----	29	506	.7	71	121	6.4	29	594				
900----	29	937	- 1.8	69	139	5.2	29	1,028				
850----	29	1,391	- 4.4	69	140	6.2	29	1,487	2.2	48	350	6.2
800----	29	1,866	- 7.1	69	164	6.2	29	1,975	.0	44	347	7.2
750----	29	2,368	- 9.8	66	169	6.6	29	2,489	- 2.4	42	325	9.1
700----	29	2,898	-12.7	64	183	6.4	29	3,035	- 5.0	40	323	15.3
650----	29	3,458	-16.1	61	213	7.0	29	3,613	- 8.6	37	316	21.4
600----	29	4,059	-19.8	58	225	8.7	29	4,231	-12.3	34	314	26.6
550----	29	4,699	-24.1	56	212	8.4	29	4,887	-16.1		320	30.7
500----	29	5,394	-29.1	52	226	8.7	29	5,603	-21.0		314	36.9
450----	29	6,130	-34.5	49	229	13.6	29	6,367	-26.5		312	42.0
400----	29	6,950	-40.4		223	12.6	29	7,214	-32.8		310	47.6
350----	29	7,848	-46.8		220	13.6	29	8,142	-39.2		307	57.3
300----	29	8,857	-52.8		231	17.9	29	9,183	-45.9		307	63.5
250----	29	10,023	-56.1		216	24.9	29	10,377	-53.2		305	70.1
200----	29	11,445	-55.0		242	28.4	29	11,795	-58.0		299	78.1
175----	29	12,303	-52.7				27	12,627	-57.9		295	69.9
150----	29	13,303	-51.2				27	13,599	-57.7		297	60.2
125----	29	14,488	-51.3				27	14,747	-59.3		296	51.3
100----	29	15,938	-51.6				26	16,135	-62.4		300	42.4
80-----	29	17,383	-52.2				24	17,518	-62.7		294	28.4
60-----	29	19,242	-52.6				23	19,290	-61.2		293	17.5
50-----	29	20,419	-52.8				21	20,422	-60.1		309	11.3
40-----	29	21,856	-53.6				18	21,822	-58.3		307	6.2
30-----	29	23,700	-54.6				16	23,641	-56.4		308	6.4
25-----	29	24,862	-55.7				16	24,801	-55.3		293	7.2
20-----	26	26,285	-57.5				13	26,235	-53.0		263	16.1
15-----	22	28,106	-59.4				9	28,052	-52.7			
10-----	8	30,744	-60.7									

Note: All observations scheduled at 1200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. FEBRUARY 1960

Date	Sun's zenith distance								
	A.M.				*	P.M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	MAUNA LOA OBS., HAWAII								
	Air mass								
	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Feb.									
1	----	1.40	1.50	1.60	1.67	K 1.28	K 1.13	K 1.00	K 0.84
2	1.33	1.42	1.51	1.60	K 1.62	K 1.27	K 1.04	K 1.14	K .95
3	1.30	1.38	1.48	1.59	K 1.68	K 1.49	K 1.41	----	----
4	1.20	1.29	1.39	1.52	K 1.65	1.52	1.41	1.29	1.21
5	1.23	1.32	1.44	1.55	1.65	----	----	----	K 1.15
6	1.30	1.38	1.48	K 1.60	K 1.65	----	K 1.39	K 1.30	K 1.25
7	1.30	1.38	1.48	1.59	K 1.65	K 1.56	K 1.41	K 1.25	K 1.17
8	1.33	1.41	1.52	1.63	K 1.74	1.62	1.51	1.42	1.34
9	----	----	----	1.62	----	----	----	----	----
10	1.33	1.40	1.50	1.60	----	----	----	----	----
11	1.24	----	----	----	----	----	----	----	----
17	1.13	----	----	----	----	----	----	----	----
18	1.19	1.27	1.39	1.50	----	----	----	----	----
19	1.21	1.31	1.41	1.52	----	----	----	----	----
20	1.27	1.37	1.48	1.59	1.72	----	----	----	1.27
21	1.36	1.43	1.53	1.64	1.68	----	----	----	----
22	1.34	1.41	1.52	1.62	----	----	----	----	----
23	1.26	1.35	K 1.49	K 1.63	K 1.76	K 1.63	K 1.53	1.43	1.34
24	1.30	1.37	1.48	1.58	1.69	1.56	1.43	1.36	1.28
25	1.27	1.36	1.45	1.56	1.68	----	----	----	----
26	1.30	1.37	1.46	1.57	1.69	1.54	1.43	1.33	1.25
27	1.30	1.38	1.47	1.58	1.69	1.54	1.42	1.31	1.22
28	1.34	1.41	1.51	1.60	1.65	----	----	----	----
Averages	1.28	1.37	1.47	1.59	1.68	1.50	1.37	1.28	1.19
	TUCSON, ARIZ.								
	Air mass								
	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Feb.									
4	1.05	1.14	H 1.19	H 1.37	1.49	1.41	1.22	1.11	1.00
12	H .87	H .96	H 1.10	H 1.33	1.47	1.36	1.19	1.07	.97
14	H .92	H 1.02	H 1.09	H 1.32	1.47	1.36	1.16	H 1.00	H .91
15	.97	1.06	1.19	1.35	1.46	1.32	1.16	1.03	.99
22	.94	1.05	1.17	1.33	1.46	1.30	1.12	H .98	H .88
Averages	0.95	1.04	1.15	1.34	1.47	1.35	1.18	1.04	0.95
	OMAHA, NEBR.								
	Air mass								
	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Feb.									
8	----	----	----	----	S 1.37	1.32	----	----	----
11	----	----	----	----	1.50	----	----	----	----
12	1.13	1.24	1.33	1.49	1.53	S 1.47	S 1.12	S 0.91	S 0.76
13	1.13	1.22	1.30	1.45	1.51	1.38	----	----	----
15	I .79	I .96	I 1.16	M 1.32	S 1.43	----	----	----	----
17	----	----	----	----	S 1.46	H 1.38	H 1.07	S .95	S .84
18	S 1.07	S 1.14	----	----	----	----	----	----	----
21	----	----	----	----	H 1.22	M 1.10	M .78	----	----
28	H .59	H .71	H .83	H 1.04	S 1.19	H 1.04	H .63	H .42	H .30
29	S .84	S .89	S 1.01	S 1.19	1.30	1.08	.71	----	----
Averages	0.93	1.03	1.13	1.29	1.39	1.25	0.86	0.76	0.63

Date	Sun's zenith distance								
	A.M.				*	P.M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	ALBUQUERQUE, N. MEX. †								
	Air mass								
	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Feb.									
1	----	----	----	1.38	----	1.35	----	----	----
3	----	----	----	1.11	1.19	1.24	1.12	1.05	0.94
6	0.97	1.04	1.13	1.25	1.34	1.26	1.11	.99	.89
7	----	----	----	1.28	1.37	1.25	----	.97	.89
8	.91	.99	1.09	1.23	----	----	----	----	----
10	.84	.92	1.01	1.15	1.25	1.18	1.07	.95	----
11	.92	1.01	1.09	1.21	1.39	1.27	1.07	.93	.87
12	.91	1.01	1.10	1.26	1.38	1.30	1.16	1.05	.95
14	.99	1.08	1.19	1.32	----	----	1.12	.99	.83
15	.97	1.06	1.15	1.26	1.36	1.19	----	----	.93
16	----	----	----	1.27	----	----	----	----	----
17	.86	.99	1.14	1.29	----	1.32	1.18	1.07	.99
18	----	----	----	----	----	----	----	1.01	.90
21	----	1.02	1.11	1.25	----	----	1.05	.92	.85
23	.89	.98	1.07	1.25	----	----	----	----	----
24	----	----	----	----	----	----	.99	.88	.81
25	----	----	----	1.20	1.27	----	----	.93	----
28	----	.87	.97	1.12	----	----	----	----	----
Averages	0.90	0.99	1.09	1.23	1.33	1.26	1.10	0.99	0.90
	MADISON, WIS.								
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Feb.									
12	S 1.11	S 1.22	S 1.33	S 1.45	S 1.50	S 1.46	S 1.29	S 1.18	S 1.06
13	M .82	S 1.15	S 1.29	S 1.42	S 1.46	S 1.44	S 1.31	S 1.18	S 1.07
14	S 1.11	S 1.22	S 1.33	S 1.46	----	----	S 1.32	----	----
18	M 1.00	M 1.10	M 1.23	S 1.38	S 1.41	S 1.37	----	----	----
19	----	----	S 1.14	S 1.37	S 1.46	----	S 1.34	S 1.24	----
27	S .91	S 1.03	S 1.17	S 1.38	S 1.46	----	----	----	----
29	----	M .93	M 1.10	M 1.30	M 1.43	----	----	----	----
Averages	0.99	1.11	1.23	1.39	1.45	1.42	1.32	1.20	1.07
	BLUE HILL OBS., MASS.								
	Air mass								
	4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Feb.									
4	1.03	1.12	1.22	1.36	1.39	1.35	1.20	1.08	0.92
8	1.03	1.13	1.26	1.41	1.44	1.41	1.23	1.11	.99
15	.83	.97	1.13	1.33	1.44	1.40	1.24	----	----
16	----	.90	1.06	1.28	1.37	1.23	----	----	----
18	----	----	H .88	H 1.10	----	----	----	----	----
21	.95	1.06	1.17	1.34	1.36	1.33	----	----	----
23	.89	1.01	1.10	1.24	1.34	1.27	----	.88	.76
24	.81	.97	1.09	1.28	1.37	1.25	1.06	.93	.82
27	.84	.94	1.05	----	----	----	----	----	----
28	----	1.05	1.17	----	----	----	----	----	----
Averages	0.91	1.02	1.11	1.29	1.39	1.32	1.18	1.00	0.87

* Values corresponding to true solar noon.
† Data should be considered doubtful due to moisture in instrument.
K Smoke.
H Haze.
I Intense haze - indeterminable.
M Moderate haze - indeterminable.
S Slight haze - indeterminable.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

FEBRUARY 1960

1960	Albuquerque, N.Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area	Cape Hatteras, N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.	Dodge City, Kans.	El Paso, Tex.	Ely, Nev.	Flaming Gorge, Utah	Ft. Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hartford, Conn.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Lander, Wyo.
Feb. 5-----	394	60	113	389	178	94	---	44	173	234	---	208	459	697	113	266	69	83	19	141	394	438	206	189	190	90	336	127	256	71	21	170	203	24	239	112	311	229
Feb. 6-----	425	---	27	349	17	122	---	104	90	35	---	47	467	688	420	119	309	7	92	34	386	433	365	384	474	129	393	---	342	217	292	153	39	35	443	79	444	360
Feb. 7-----	426	---	51	476	276	365	---	109	175	207	---	143	294	---	438	88	402	155	218	179	385	454	209	139	479	135	483	(192)	297	210	399	585	177	159	308	49	---	226
Feb. 8-----	383	---	196	469	81	410	---	89	166	322	---	322	451	656	465	201	426	89	130	59	348	411	256	230	434	119	475	---	154	61	398	640	371	84	407	190	421	213
Feb. 9-----	---	---	185	467	164	158	---	62	112	201	---	172	458	705	361	144	---	127	100	121	126	251	162	(395)	421	102	514	135	220	87	290	342	274	28	475	102	145	327
Feb. 10-----	---	---	147	283	196	91	---	62	267	106	---	94	428	686	330	137	318	39	55	199	419	375	335	226	505	266	442	160	313	80	200	146	32	147	215	97	415	352
Feb. 11-----	456	---	27	495	72	430	67	111	288	42	---	32	372	686	405	85	426	42	366	133	284	269	415	179	374	345	510	---	301	270	405	676	73	123	497	95	244	365
Average-------	417	---	107	419	141	239	---	83	182	164	---	145	418	686	362	149	325	77	140	124	335	376	278	(249)	411	169	450	(154)	269	143	286	388	167	86	369	103	330	296
Feb. 12-----	464	343	92	114	---	363	47	117	235	222	---	261	47	610	451	98	317	115	412	40	431	444	409	402	181	331	117	---	399	39	411	550	---	337	481	136	50	370
Feb. 13-----	381	323	19	139	---	24	17	154	130	285	---	302	500	674	22	104	9	143	351	89	192	478	295	148	527	318	123	---	183	156	48	71	374	177	456	173	505	216
Feb. 14-----	466	338	34	529	41	387	79	180	308	84	---	81	499	624	230	48	437	186	398	83	105	437	415	419	486	355	533	343	317	181	441	---	31	263	502	101	477	413
Feb. 15-----	465	319	158	516	227	394	21	98	191	341	---	353	414	683	502	189	453	233	280	234	---	488	380	275	138	273	513	200	381	227	454	334	378	301	473	359	127	400
Feb. 16-----	370	208	92	402	255	352	78	70	282	329	---	331	495	509	411	340	430	157	374	215	---	488	273	386	521	328	377	220	259	138	256	429	373	47	507	242	306	304
Feb. 17-----	467	290	124	447	---	332	23	81	155	243	---	260	486	124	481	251	374	50	372	143	---	---	438	412	61	356	413	152	420	109	376	398	293	109	543	187	273	363
Feb. 18-----	382	280	62	334	272	87	54	100	343	280	---	277	514	658	155	312	240	78	435	122	---	(400)	186	357	553	99	383	411	319	316	69	129	---	134	120	231	516	375
Average-------	428	300	83	354	199	277	46	114	235	255	---	266	422	559	323	192	323	138	374	132	---	(456)	342	343	352	294	351	265	326	167	294	318	290	195	183	204	322	349
Feb. 19-----	364	360	23	542	172	479	112	225	350	51	---	36	291	650	493	70	478	177	365	---	273	484	291	(256)	549	330	538	269	193	309	439	559	146	364	454	54	508	280
Feb. 20-----	306	141	106	549	---	449	134	82	323	195	---	222	147	677	511	156	473	169	150	---	174	520	461	367	121	376	547	(372)	401	278	468	534	268	285	532	79	71	432
Feb. 21-----	467	366	134	364	262	69	111	114	364	355	---	371	47	684	(181)	209	276	130	264	---	---	(516)	---	251	555	383	268	172	239	106	251	100	366	83	539	258	60	391
Feb. 22-----	265	362	209	136	327	421	140	211	348	293	---	258	359	688	68	211	44	164	389	---	119	536	290	192	558	267	68	351	319	311	282	456	233	408	499	217	512	228
Feb. 23-----	451	184	86	551	---	471	54	143	390	371	---	373	297	715	492	189	479	209	88	---	449	455	378	452	235	363	550	292	403	351	466	566	429	214	547	359	500	415
Feb. 24-----	418	365	273	290	---	411	88	61	360	375	---	376	79	---	508	225	334	261	186	---	394	465	465	411	121	380	154	379	484	214	392	473	440	225	563	374	71	408
Feb. 25-----	498	377	286	173	---	115	85	137	280	220	---	251	544	659	---	195	125	32	224	---	423	576	244	311	---	275	75	249	295	327	48	224	154	58	479	118	501	373
Average-------	396	308	160	372	---	345	103	139	345	266	---	270	252	679	(375)	179	316	163	238	---	305	(508)	355	(320)	357	339	314	(298)	342	271	335	416	291	234	516	208	318	361
Feb. 26-----	378	398	270	577	378	410	41	165	368	78	---	---	420	653	504	103	484	210	387	---	259	475	309	(297)	482	303	577	303	292	382	418	476	180	403	174	267	465	505
Feb. 27-----	261	327	297	447	385	231	63	143	331	344	---	312	286	663	510	174	356	226	254	393	272	549	299	405	45	359	527	365	416	393	457	255	471	453	260	310	247	476
Feb. 28-----	457	412	302	494	397	208	36	188	(409)	336	---	340	239	(690)	372	253	257	198	473	410	508	(541)	441	301	413	144	168	406	460	378	285	219	567	247	273	366	316	483
Feb. 29-----	280	458	315	332	371	417	70	208	348	279	449	259	62	672	441	356	128	217	520	405	366	(478)	285	431	95	168	177	---	286	317	---	382	308	458	220	371	---	508
Mar. 1-----	302	394	321	395	264	177	62	184	411	425	354	422	54	695	498	348	314	322	370	226	245	443	320	399	40	---	454	---	276	337	461	286	604	440	382	373	61	502
Mar. 2-----	---	222	319	172	116	33	88	235	340	432	236	431	336	594	214	259	13	261	140	56	439	(288)	501	478	154	407	319	355	510	---	82	53	495	193	578	391	109	509
Mar. 3-----	460	424	248	451	60	156	67	294	427	59	144	49	399	---	402	406	166	167	512	151	522	(569)	224	(440)	---	338	454	451	405	440	354	---	45	379	507	---	357	513
Average-------	356	377	296	410	282	233	61	202	(376)	279	296	302	257	(661)	420	271	246	229	379	274	373	(477)	340	(393)	205	286	382	376	378	374	343	283	353	368	342	346	292	500

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

	Laramie, Wyo.	Las Vegas, Nev.	Lemont, Ill.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.	Matanuska, Alaska	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Page, Ariz.	Portland, Me.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	Salt Lake City, Utah	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Seattle-Tacoma, Wash.	Shreveport, La.	Spokane, Wash.	Stillwater, Okla.	Tampa, Fla.	Tucson, Ariz.	Washington, D. C. (Ob & Test Dev Ctr)
1960																																					
Feb. 5-----	272	268	19	29	88	245	257	38	121	74	620	169	310	451	38	181	140	180	29	141	396	227	273	332	149	152	418	194	93	188	231	186	46	145	331	441	122
Feb. 6-----	261	385	61	18	411	207	276	121	115	65	633	56	424	412	57	103	184	190	69	361	402	28	173	326	189	314	435	(361)	92	212	27	422	115	324	418	434	274
Feb. 7-----	179	191	135	168	400	156	240	324	191	59	644	81	404	430	266	200	142	183	379	328	300	271	178	287	133	159	435	270	275	186	221	352	207	283	454	444	250
Feb. 8-----	98	359	132	297	295	51	25	265	266	46	670	67	501	401	342	354	298	331	321	380	300	---	219	87	275	183	376	74	53	327	99	391	93	340	484	428	259
Feb. 9-----	221	411	31	114	317	396	406	197	52	36	616	76	486	258	108	232	274	75	35	235	349	---	173	401	358	125	448	220	187	280	99	387	105	237	455	310	168
Feb. 10-----	284	109	19	66	187	384	369	90	197	122	561	201	476	459	222	84	97	307	103	368	279	95	334	222	---	201	455	314	102	122	165	446	97	217	472	266	---
Feb. 11-----	208	425	304	94	412	412	425	332	354	43	353	197	356	96	207	38	162	388	85	426	410	25	257	473	334	192	197	418	186	73	105	412	149	393	392	190	190
Average-------	218	307	100	112	301	264	285	195	185	64	585	121	423	358	177	170	185	236	146	320	348	129	230	304	240	189	395	(264)	141	198	135	371	116	277	430	359	210
Feb. 12-----	346	408	373	111	117	396	405	392	359	---	---	199	480	405	237	260	267	412	326	436	432	65	352	456	322	345	107	408	333	299	34	48	152	385	406	476	381
Feb. 13-----	152	324	180	75	404	368	392	390	350	59	509	(229)	228	461	100	244	143	403	57	430	---	308	265	416	337	84	468	406	260	169	176	470	283	390	102	404	50
Feb. 14-----	348	442	380	470	402	417	440	386	135	71	573	188	526	469	396	73	79	295	423	238	452	355	352	486	107	408	470	420	369	77	56	432	79	---	514	487	272
Feb. 15-----	(273)	413	183	480	84	418	431	197	312	66	274	292	491	472	393	380	355	408	399	226	409	342	292	476	354	320	427	373	266	358	172	150	211	173	523	488	426
Feb. 16-----	(263)	447	175	159	179	380	408	189	326	86	---	324	488	454	234	354	338	327	239	435	460	286	198	459	182	340	476	431	85	300	172	411	276	378	328	492	363
Feb. 17-----	350	456	201	107	45	425	447	227	327	69	602	221	378	310	250	314	262	421	374	262	467	303	240	499	354	355	426	428	127	321	148	129	278	271	204	510	334
Feb. 18-----	383	301	398	104	419	325	363	410	335	64	277	175	229	484	161	---	278	356	46	449	330	344	375	431	(250)	224	508	217	129	267	215	495	266	416	320	426	132
Average-------	(302)	399	270	215	236	390	412	313	306	69	447	(233)	403	436	253	271	246	376	266	354	425	286	296	460	(272)	296	412	384	224	256	139	305	221	336	343	469	280
Feb. 19-----	267	179	385	529	479	441	468	---	204	83	207	164	547	458	491	116	83	269	447	448	264	---	298	454	(364)	221	375	452	256	91	258	499	195	393	551	---	413
Feb. 20-----	390	470	297	431	112	452	465	286	40	137	681	325	530	383	335	274	255	178	391	44	468	260	287	502	257	361	67	460	351	305	76	128	211	44	520	485	417
Feb. 21-----	376	459	82	---	307	432	446	175	397	---	595	334	464	504	73	364	131	452	49	485	430	375	287	484	289	101	250	452	266	184	267	194	189	436	458	508	143
Feb. 22-----	227	491	238	508	496	410	434	284	219	33	651	368	463	504	465	296	167	340	420	382	483	369	315	472	345	384	497	(464)	382	145	190	499	304	344	59	521	322
Feb. 23-----	398	355	355	467	148	380	406	376	192	100	735	362	321	522	---	402	411	208	445	---	473	389	416	490	388	346	82	479	371	388	300	388	305	273	237	425	378
Feb. 24-----	451	505	234	149	75	459	472	357	390	156	708	322	477	---	151	406	417	449	266	161	501	326	436	523	401	381	135	481	402	306	58	39	---	199	131	545	288
Feb. 25-----	335	484	117	53	509	347	306	342	334	72	692	325	329	---	59	238	80	419	125	481	500	354	397	368	370	306	524	342	366	96	327	334	313	400	242	513	50
Average-------	349	421	244	356	304	417	428	303	254	97	610	314	447	474	262	300	221	331	306	333	446	346	348	470	(345)	300	276	(447)	342	216	211	297	253	298	314	500	287
Feb. 26-----	297	302	308	172	477	301	156	301	406	200	709	225	213	---	139	154	248	462	193	349	437	98	430	227	404	229	511	177	285	194	331	444	363	265	530	396	363
Feb. 27-----	342	425	418	527	171	384	329	477	191	190	713	393	401	479	248	343	296	286	291	110	330	333	417	199	421	393	52	---	287	339	340	198	289	104	378	531	426
Feb. 28-----	362	342	299	122	192	79	113	396	455	216	660	423	411	526	57	391	367	492	103	---	365	398	462	119	384	321	147	66	359	403	369	85	334	491	163	534	225
Feb. 29-----	495	124	478	454	491	196	146	486	458	---	714	409	390	107	436	300	208	510	365	310	173	340	474	298	430	408	66	148	443	294	351	264	355	217	422	409	249
Mar. 1-----	382	276	472	498	294	403	347	492	261	170	658	316	433	97	337	453	415	402	350	144	221	444	344	222	445	312	68	400	318	460	353	(48)	341	171	454	418	458
Mar. 2-----	486	526	239	183	77	458	482	366	190	244	504	---	534	427	67	462	463	206	55	318	528	444	407	529	251	435	421	527	475	447	248	(68)	371	262	448	546	266
Mar. 3-----	358	380	339	305	520	335	386	409	484	211	597	119	517	497	227	57	28	---	178	556	346	197	439	459	393	130	518	449	223	50	92	555	188	549	354	559	132
Average-------	389	339	365	323	317	315	280	418	349	205	651	314	414	355	216	309	289	393	219	298	343	322	425	293	390	318	255	295	341	312	298	(237)	320	294	393	485	303

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

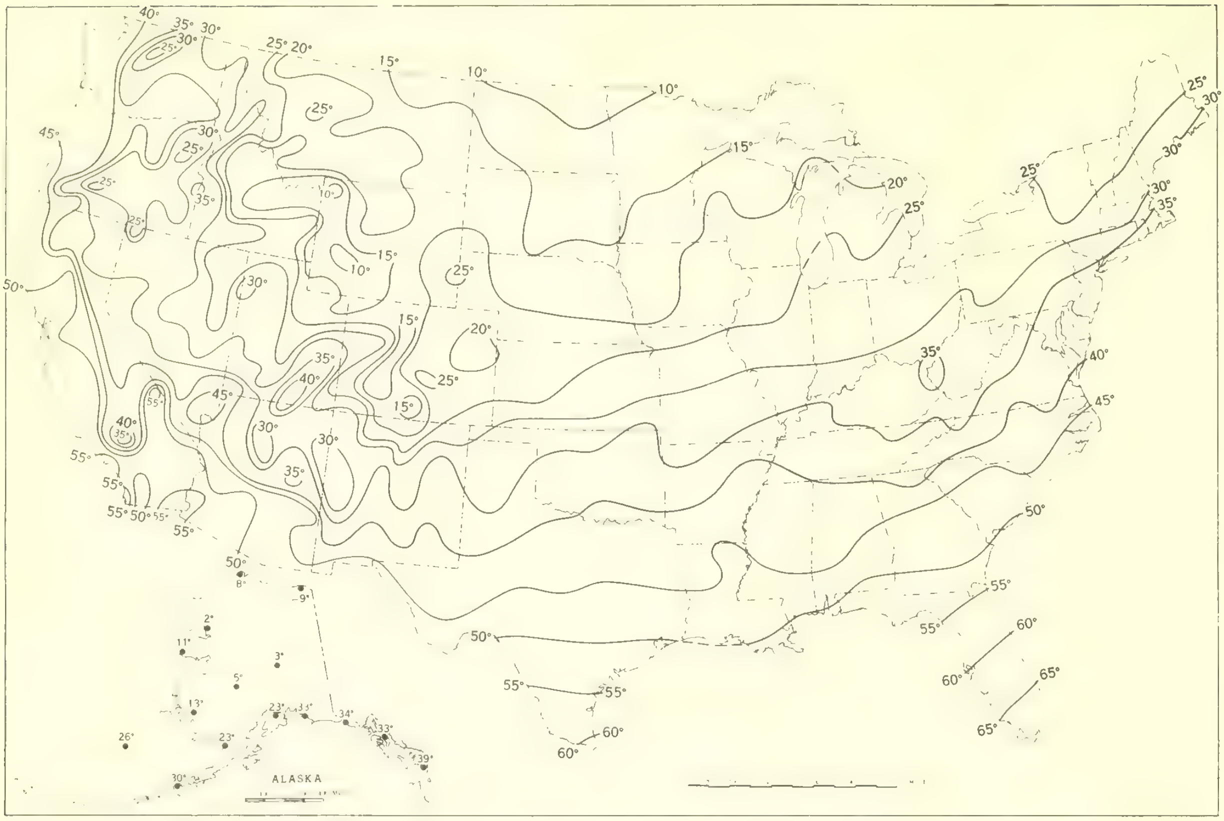
FEBRUARY 1960

Date	Bismarck, N. Dak.	Caribou, Me.	Ft. Worth, Tex.	Green Bay, Wis.	Washington, D.C. (Silver Hill Obs.)
FEB.					
1	---	---	324	386	376
2	---	---	---	---	372
3	---	421	---	300	382
4	352	363	---	294	323
5	356	328	---	---	299
6	---	---	323	---	351
7	342	---	403	431	453
8	397	---	346	368	381
9	---	---	311	341	365
10	380	---	326	---	324
11	399	---	327	---	331
12	408	---	---	385	312
13	---	---	383	385	---
14	375	---	333	255	---
15	---	---	---	---	343
16	---	408	304	---	386
17	---	---	---	---	388
18	441	394	305	398	399
19	432	---	320	---	364
20	474	---	---	389	404
21	423	---	360	---	393
22	425	---	366	---	399
23	433	---	476	---	381
24	461	---	---	---	375
25	---	---	437	---	---
26	482	---	380	---	374
27	479	---	---	---	417
28	522	---	336	---	433
29	435	486	---	530	453

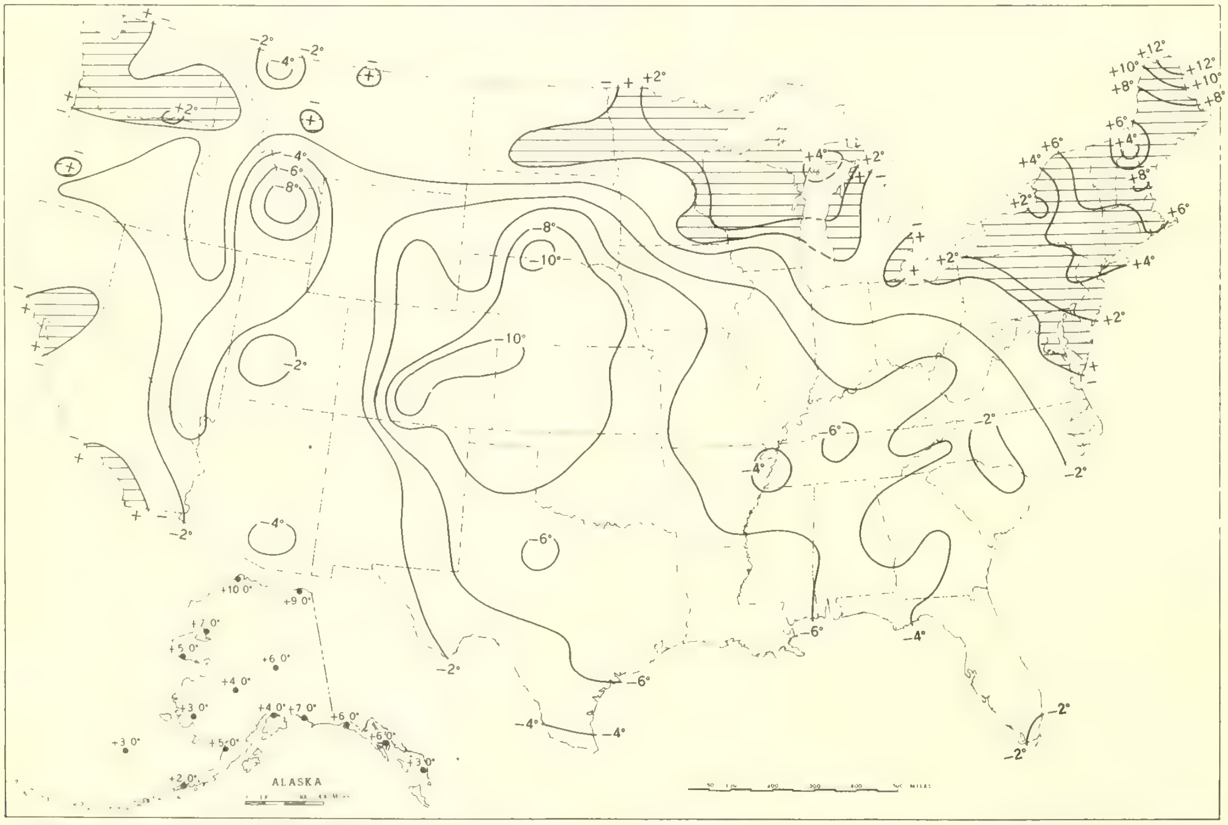
The spectrophotometer measures the total amount of ozone in the atmosphere, i.e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observation can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations; therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational procedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer", Annals of the International Geophysical Year, Volume V, Pergamon Press, 1957.

Chart I. A. Average Temperature (°F.) at Surface, February 1960.



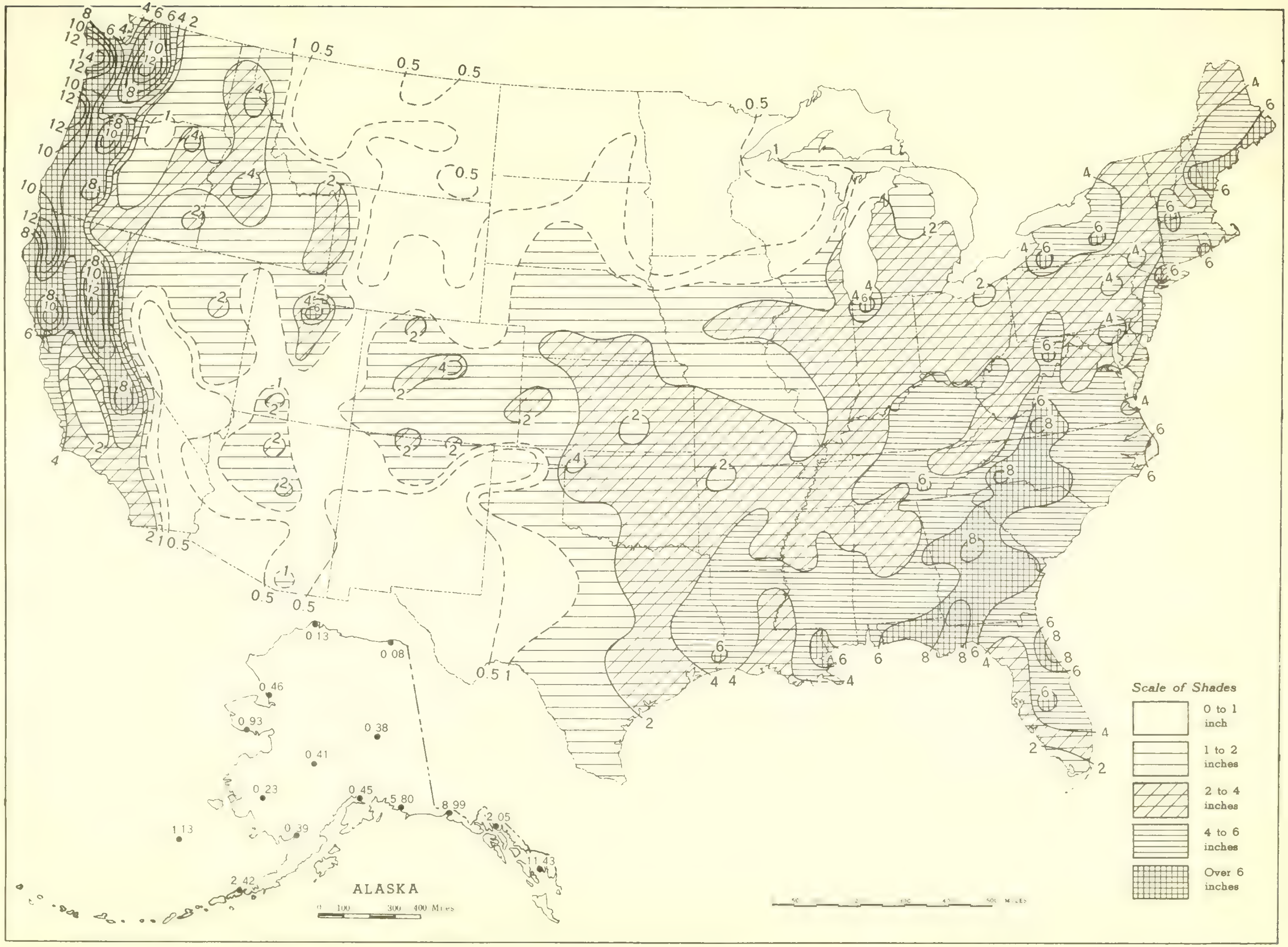
B. Departure of Average Temperature from Normal (°F.), February 1960.



A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

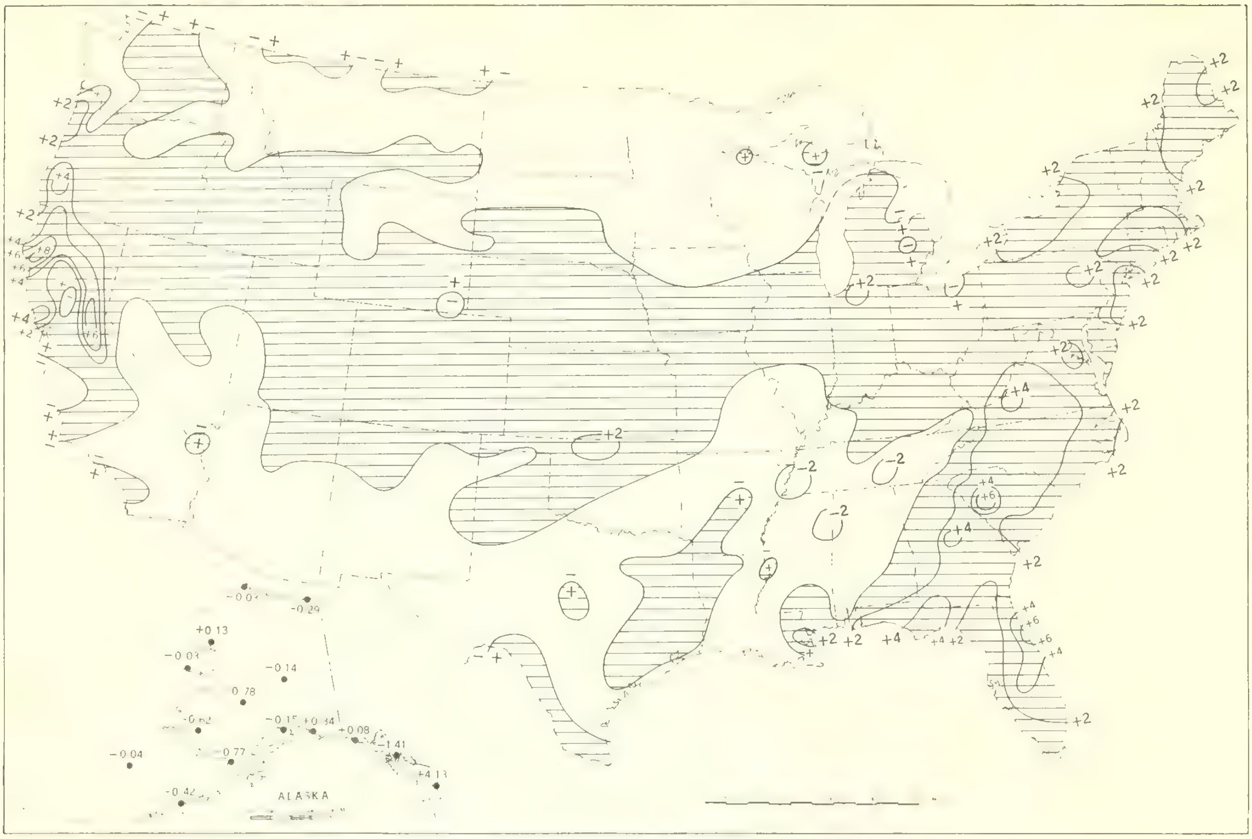
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), February 1960.

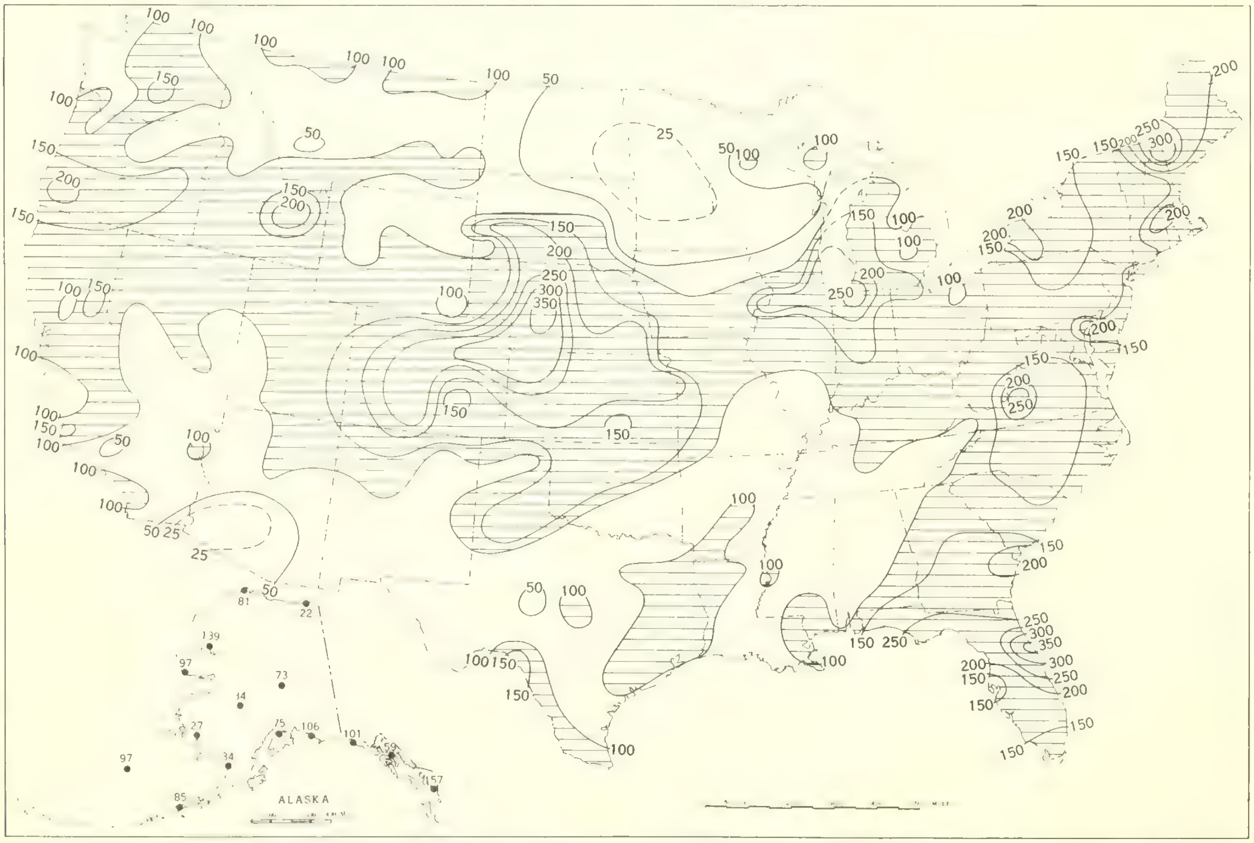


Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), February 1960.

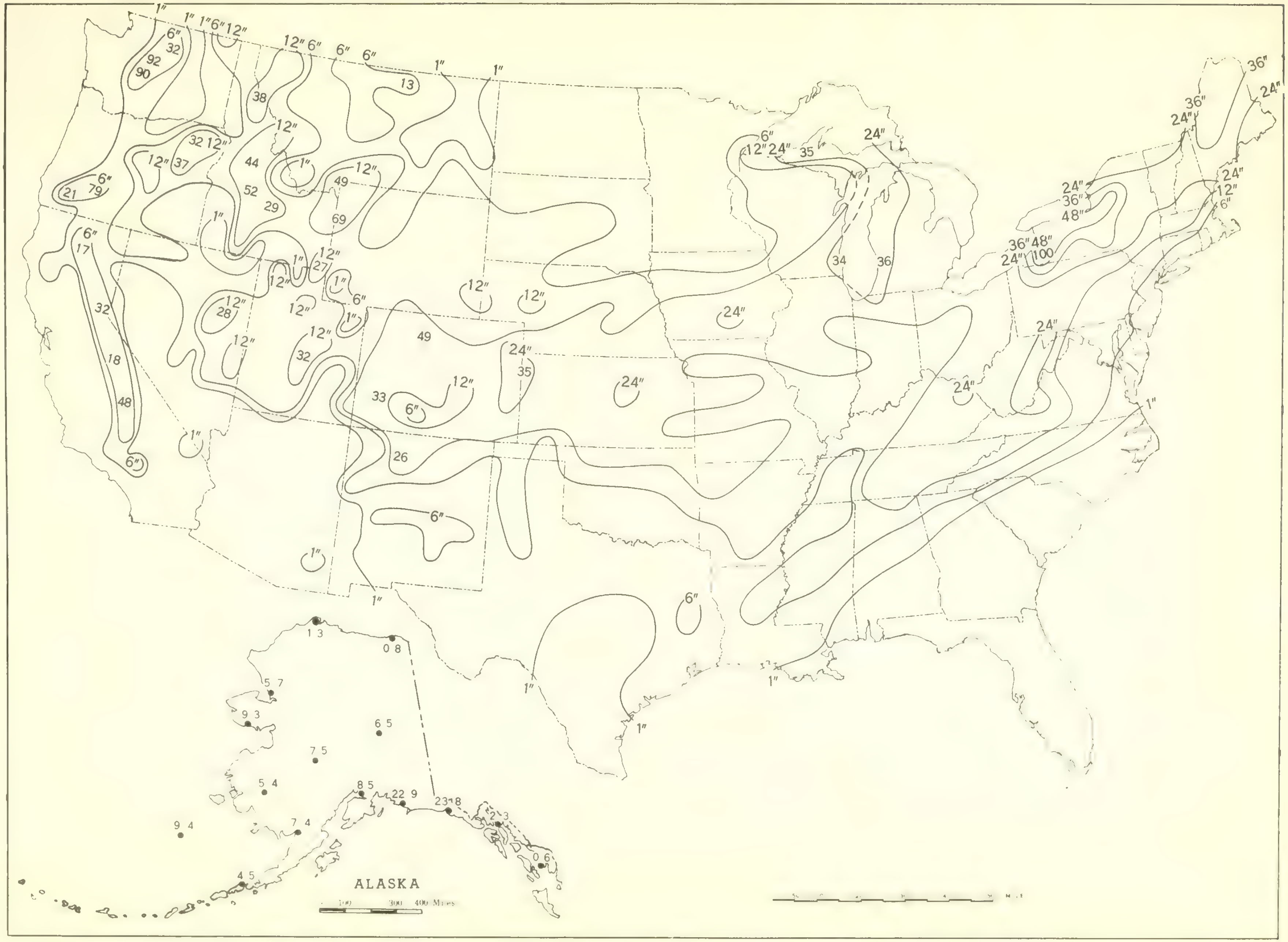


B. Percentage of Normal Precipitation, February 1960.



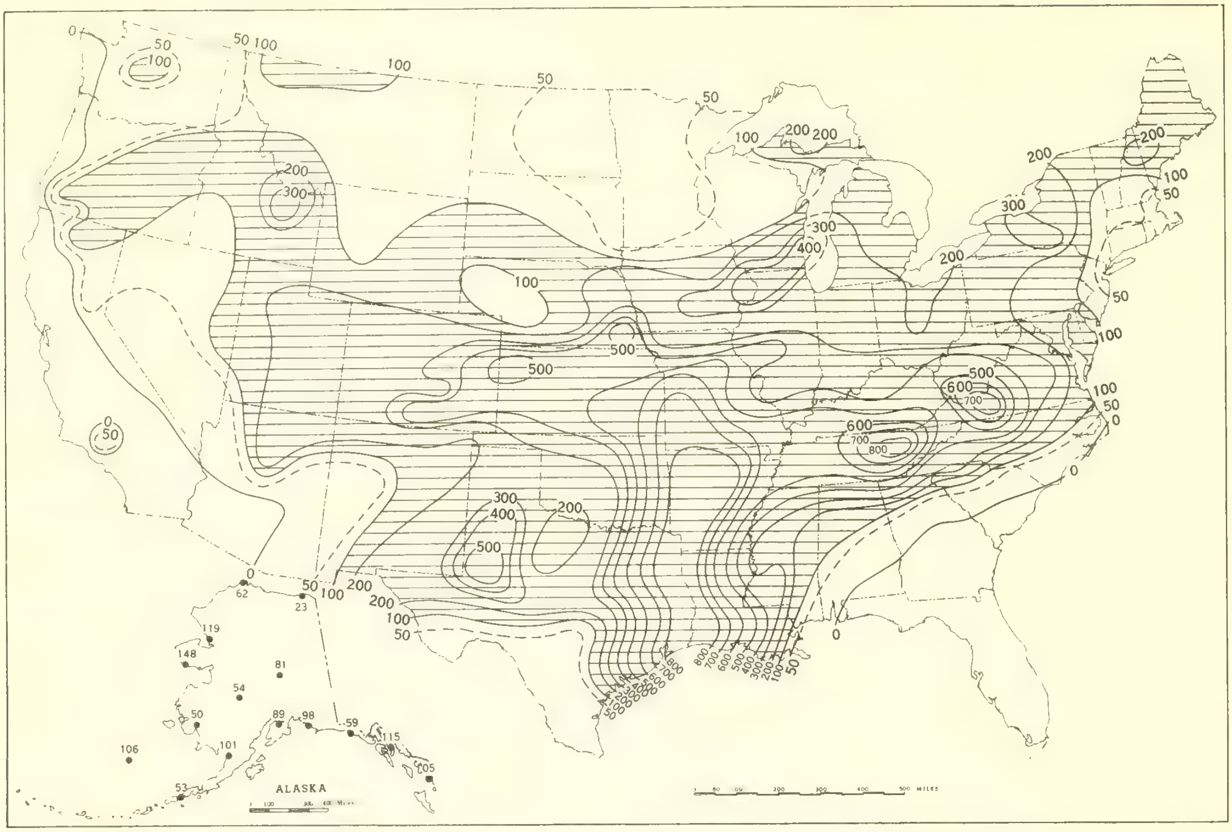
Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart IV. Total Snowfall (Inches), February 1960.

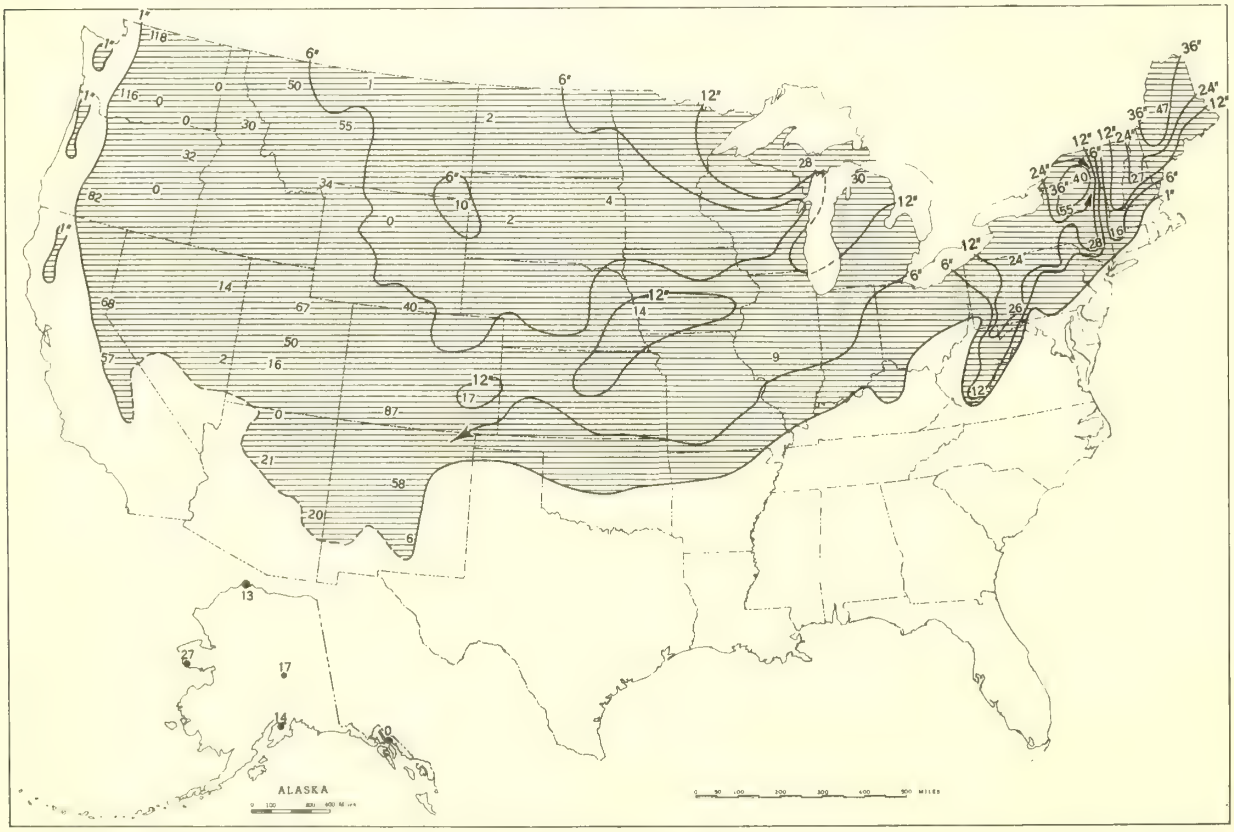


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, February 1960.

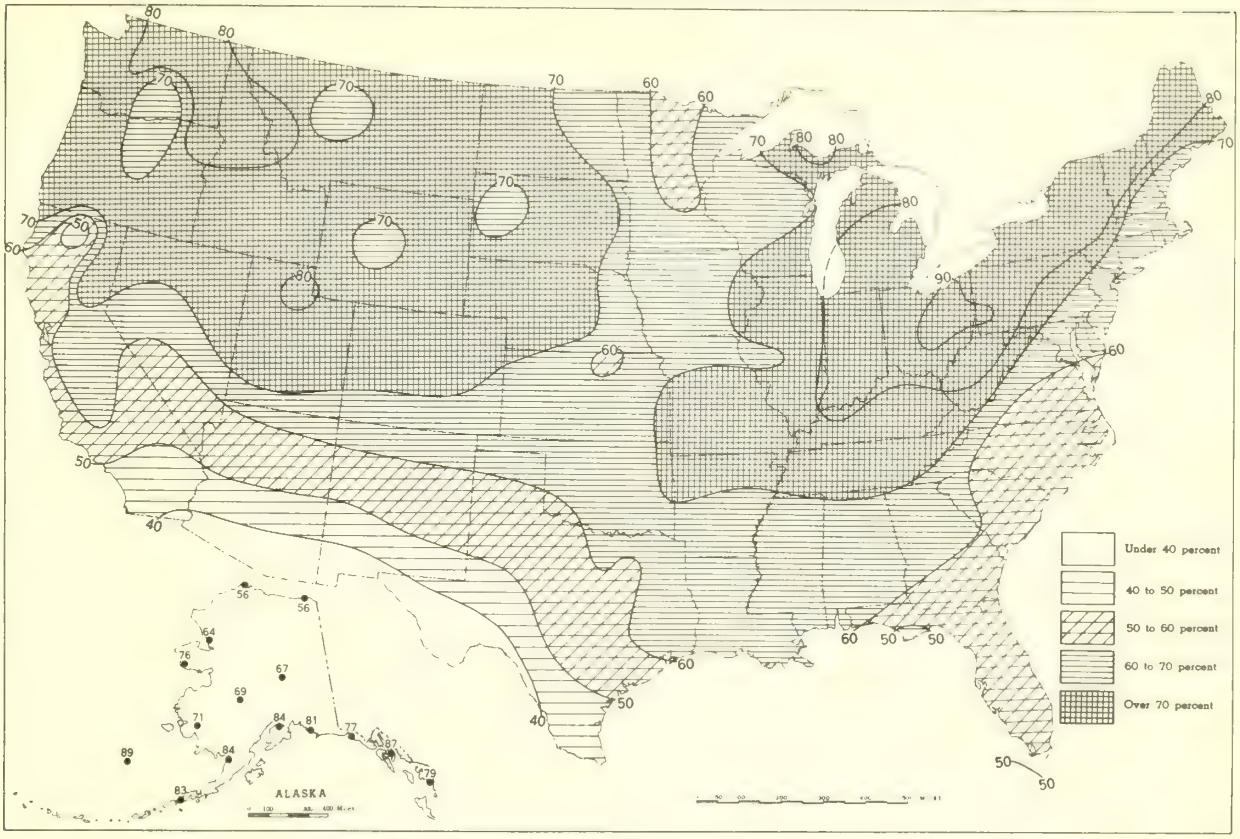


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., February 29, 1960.

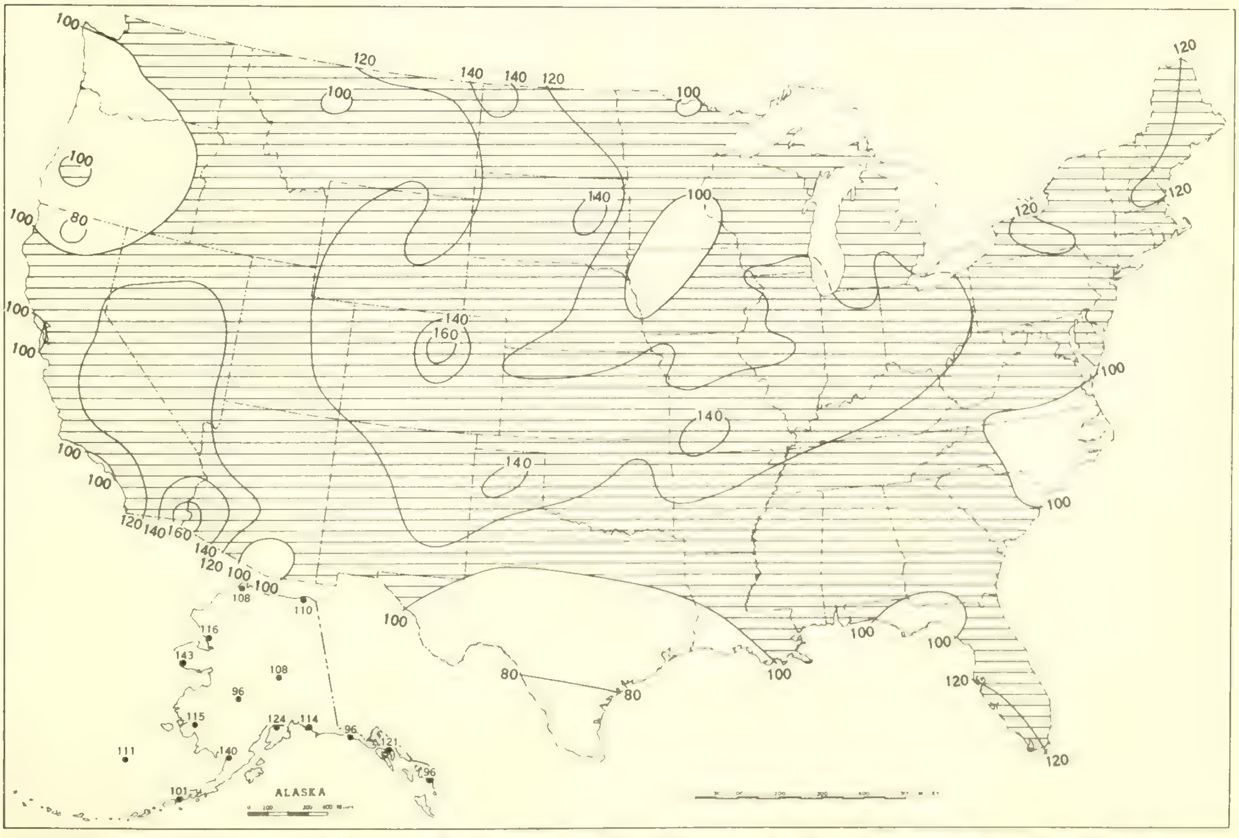


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a.m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, February 1960.

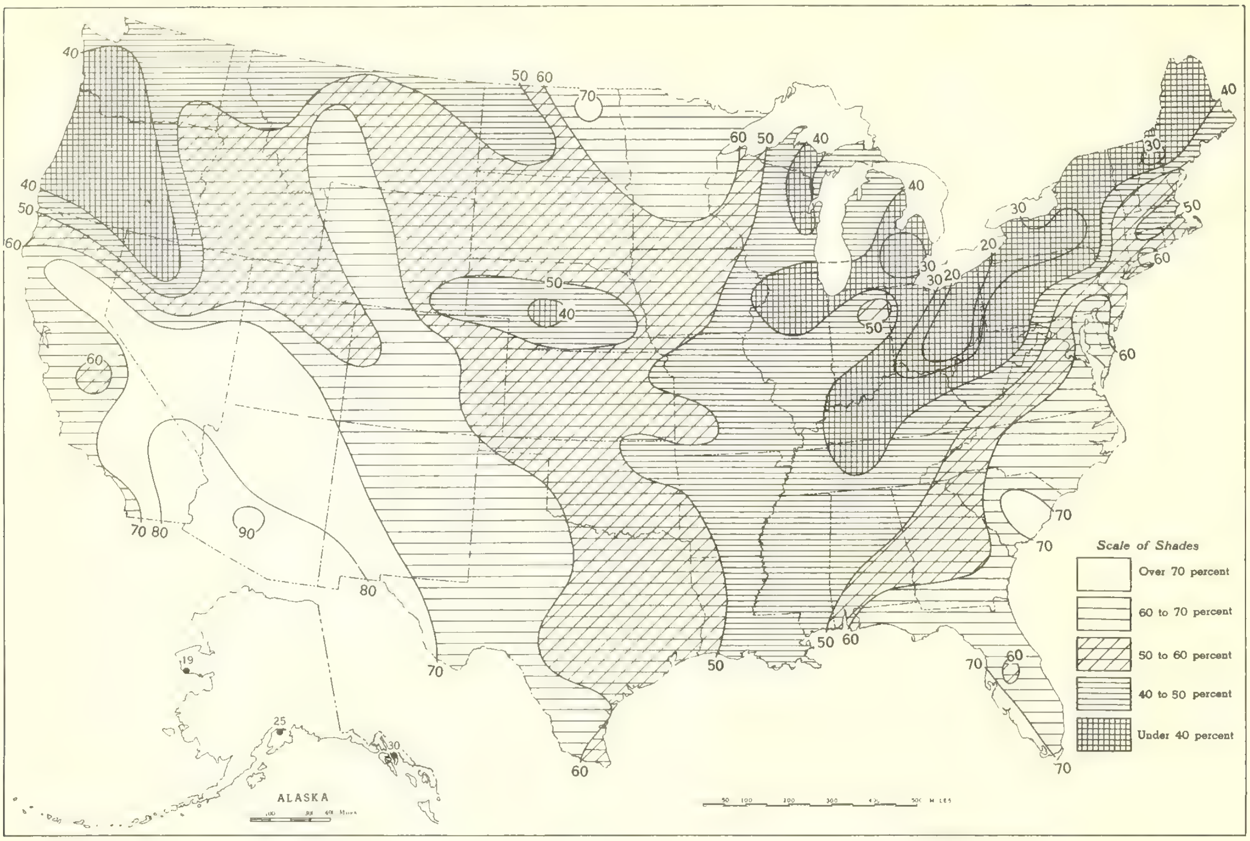


B. Percentage of Mean Monthly Sky Cover Between Sunrise and Sunset, February 1960.

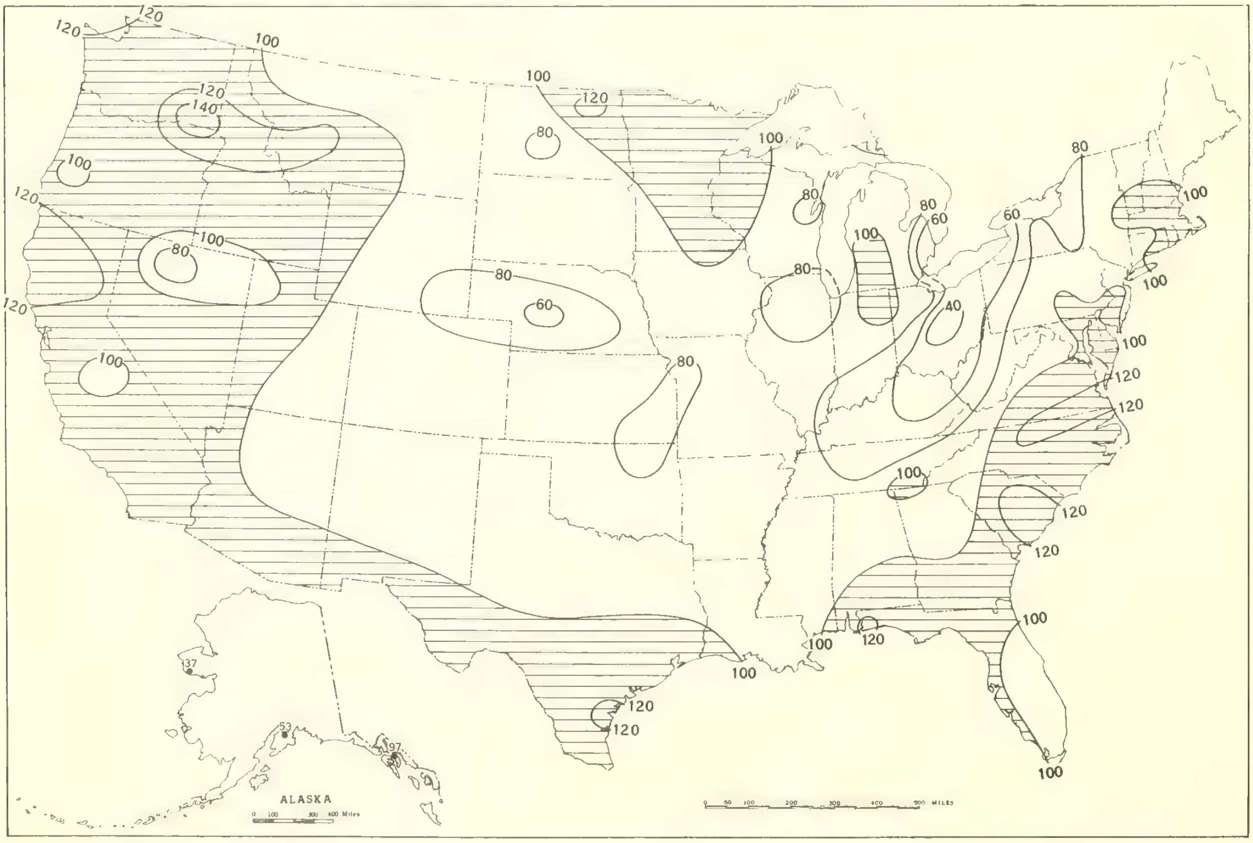


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of mean amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, February 1960.

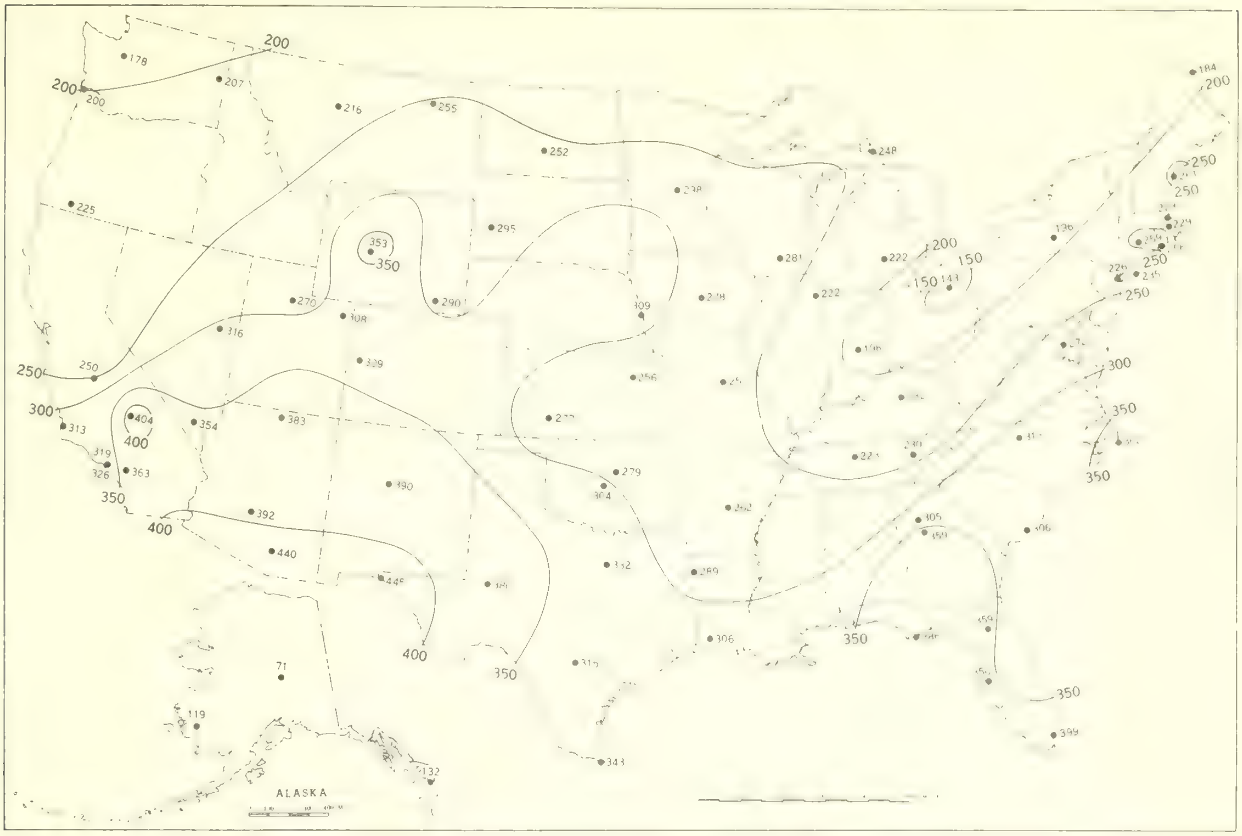


B. Percentage of Mean Monthly Sunshine, February 1960.

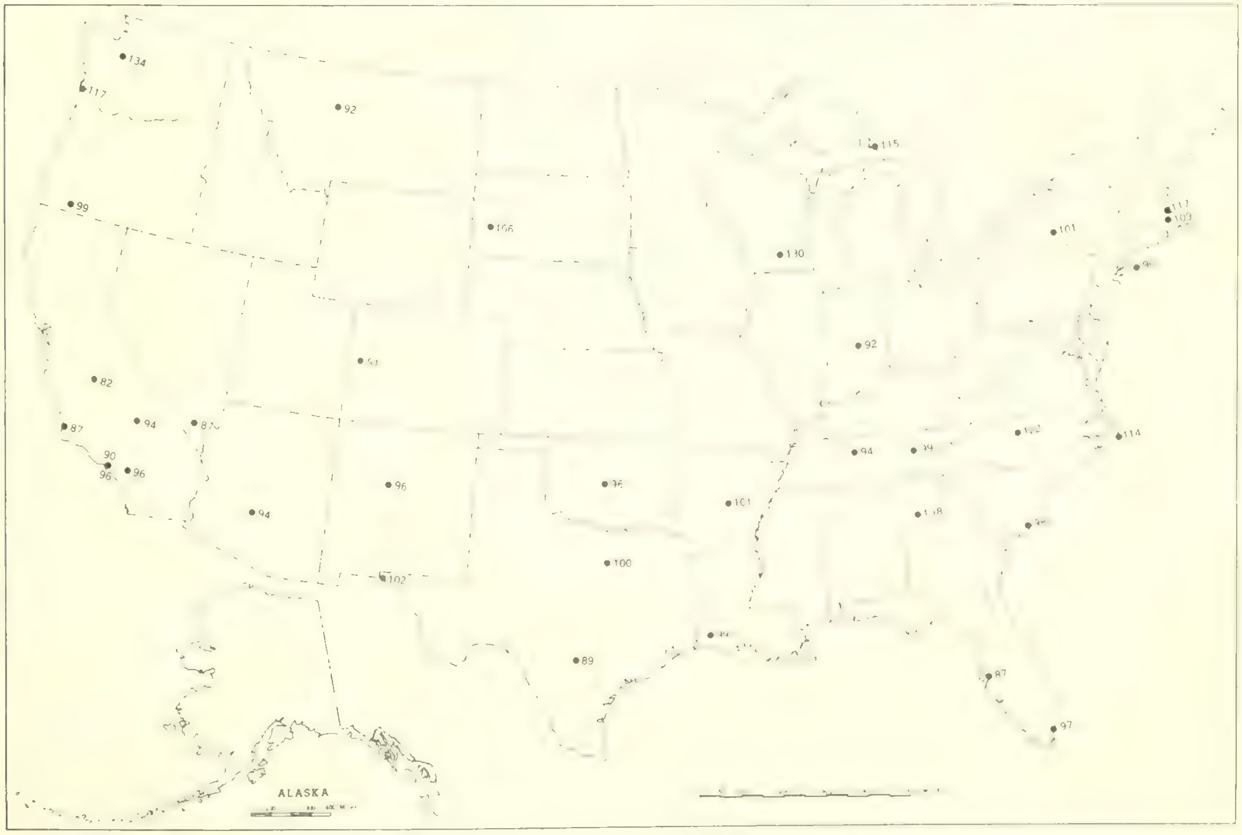


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, February 1960.



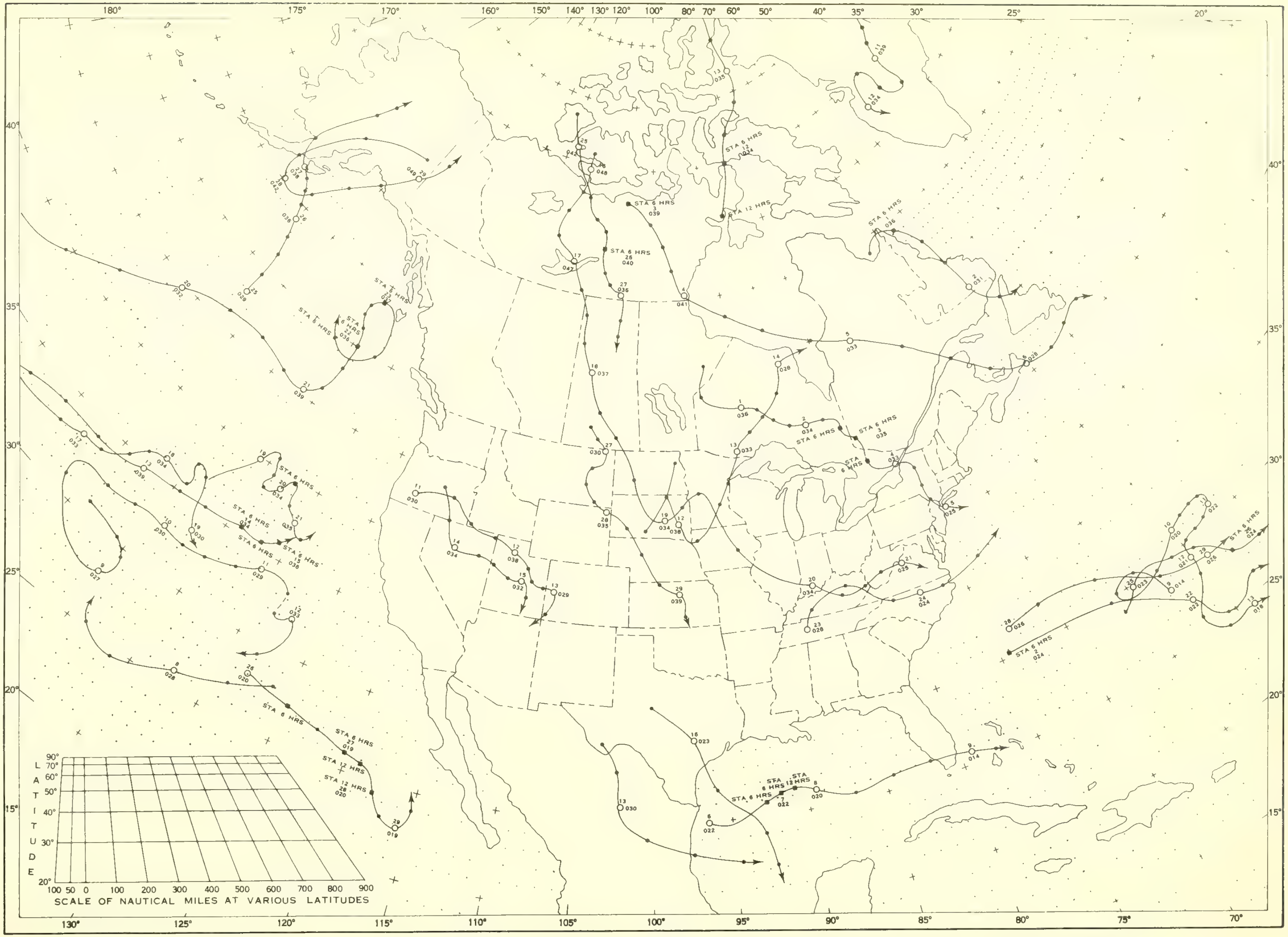
B. Percentage of Mean Daily Solar Radiation, February 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

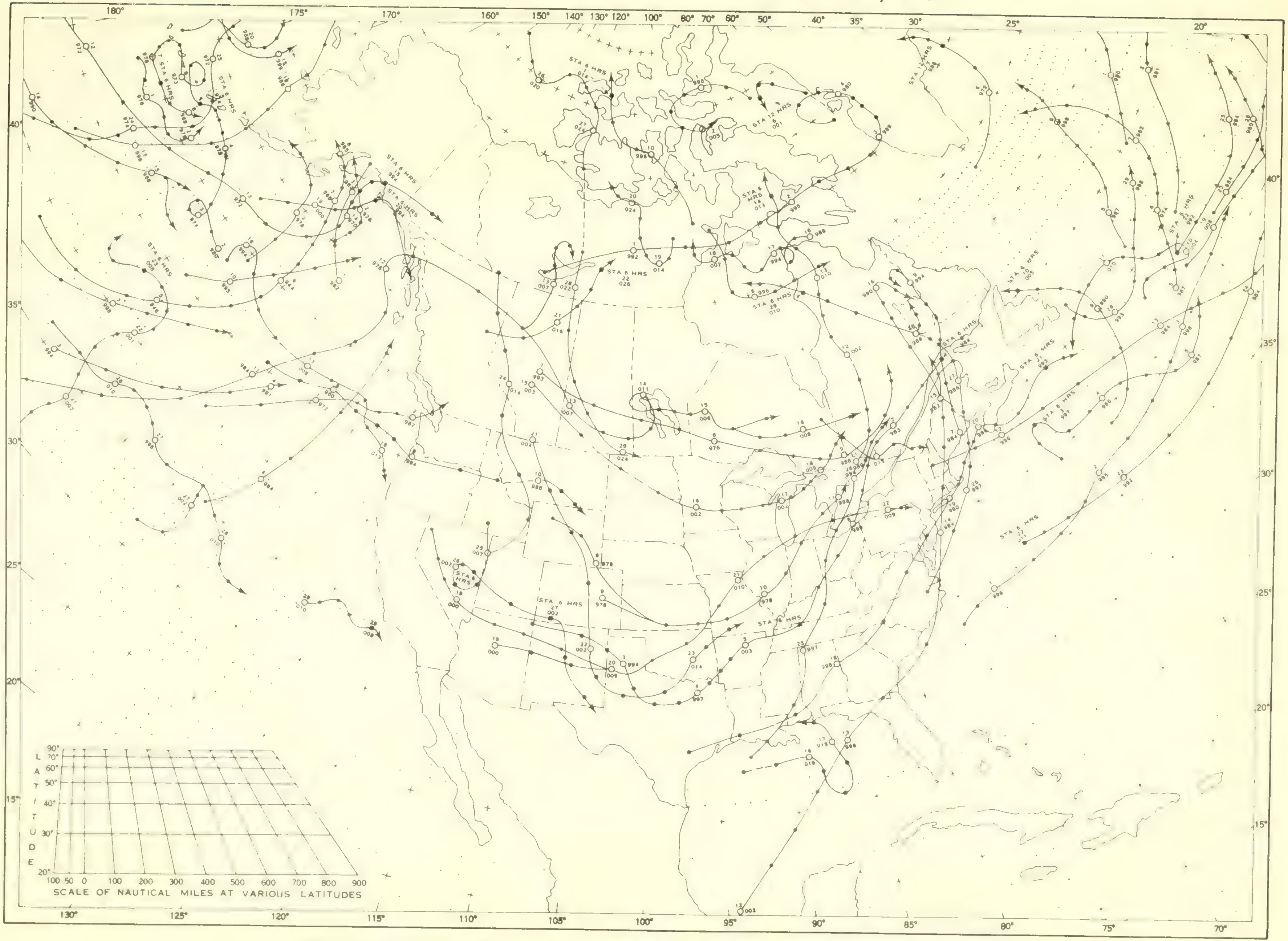
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, February 1960.



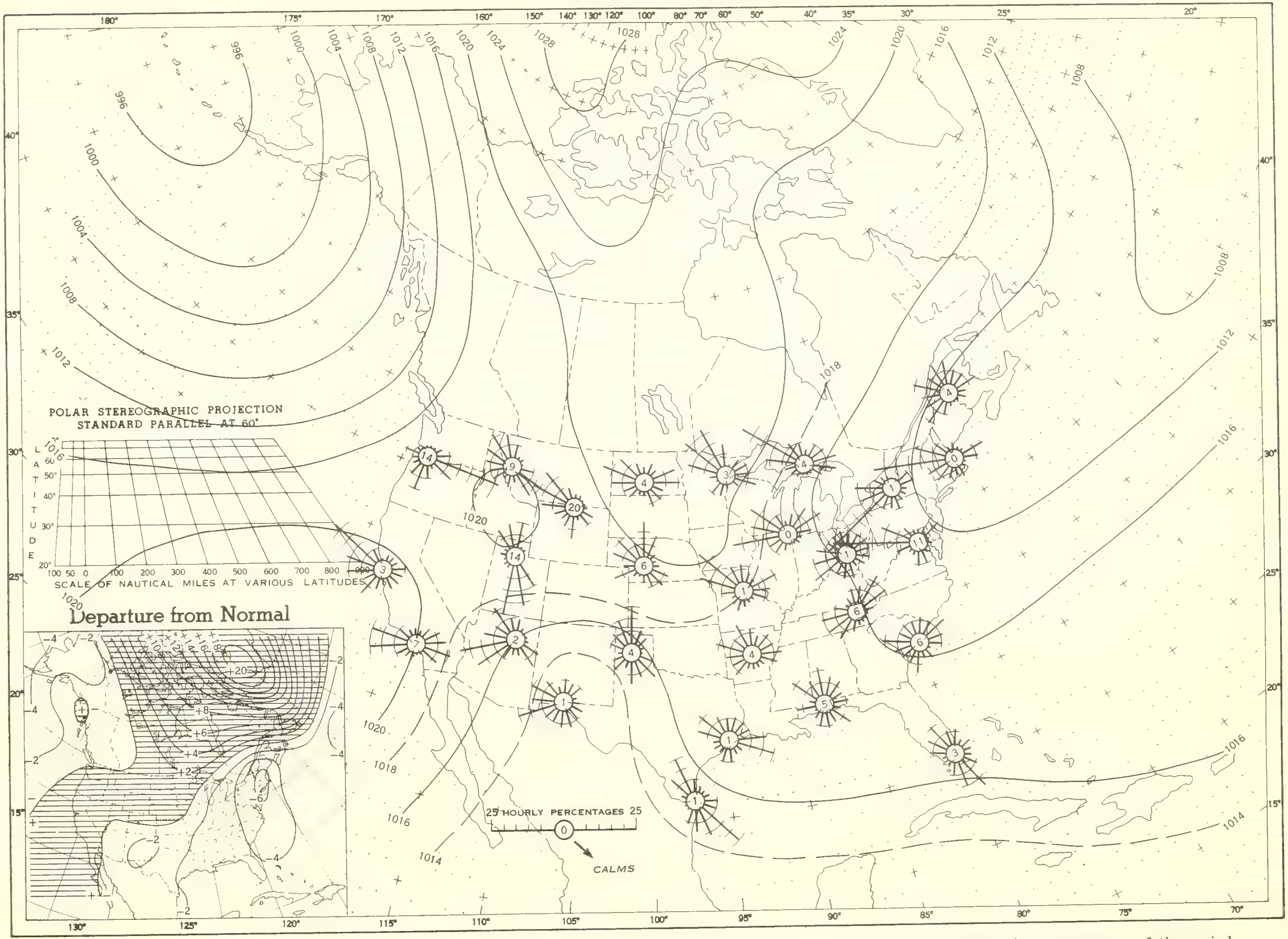
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, February 1960.



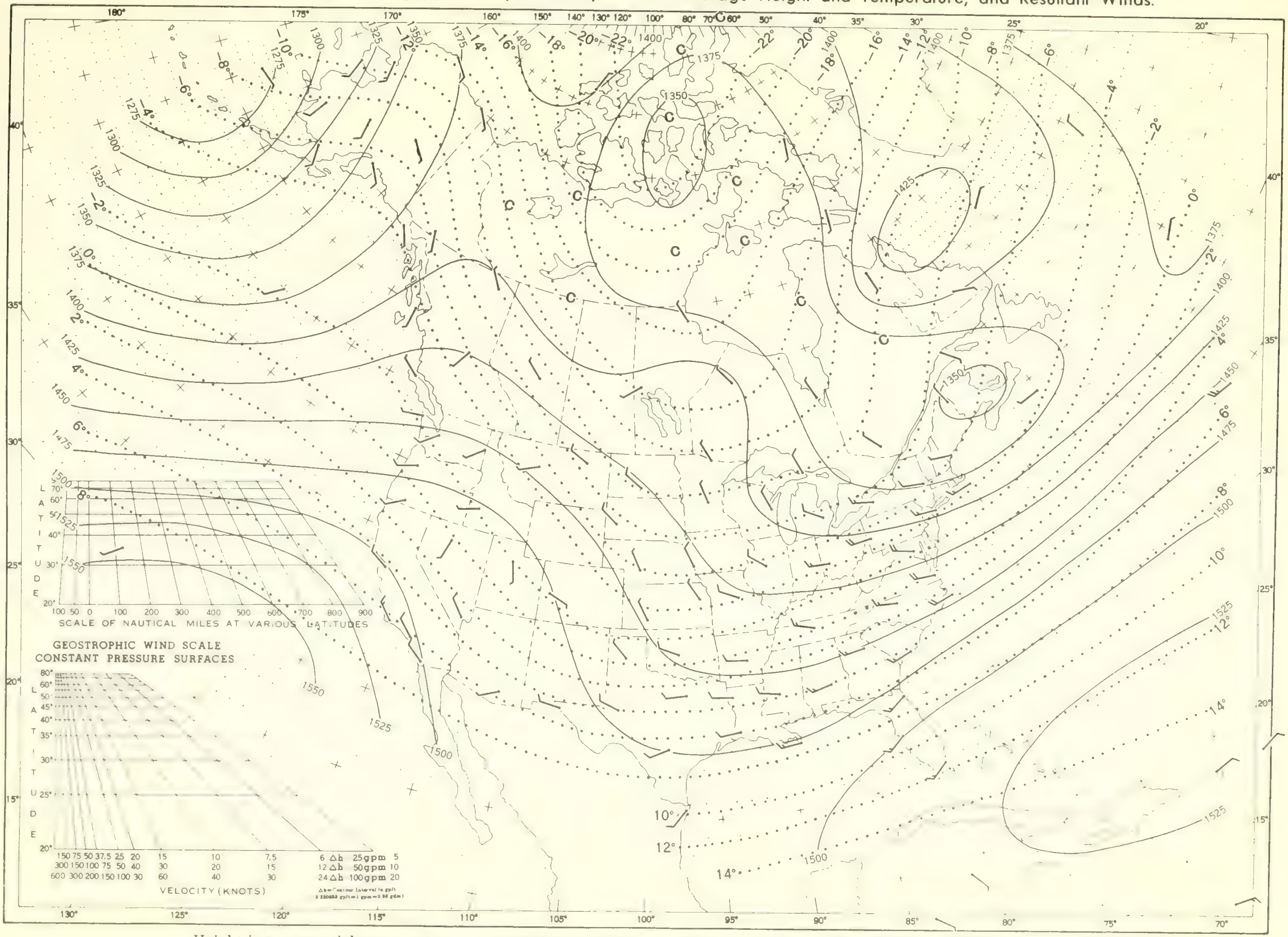
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, February 1960. Inset: Departure of Average Pressure (mb.) from Normal, February 1960.



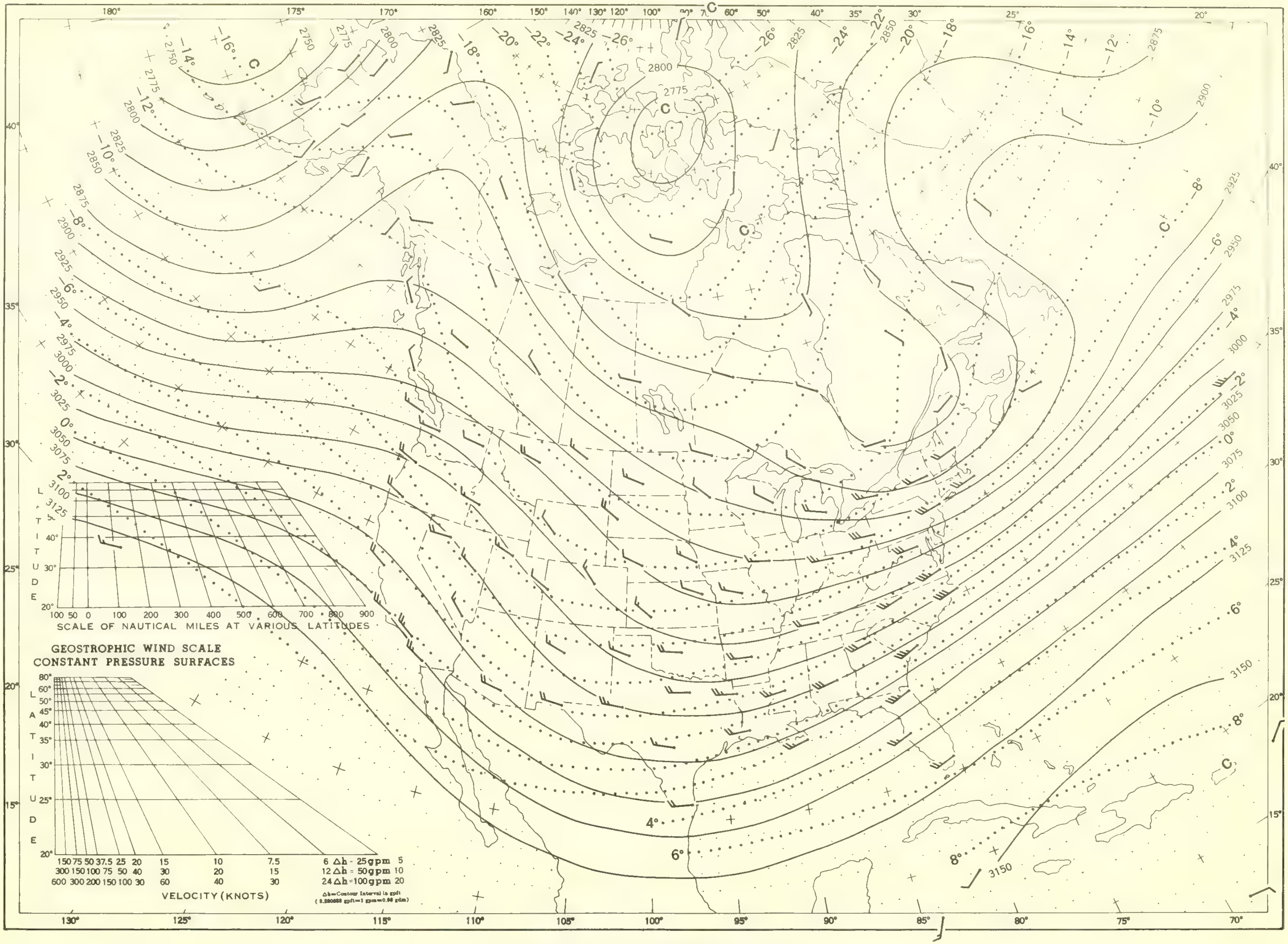
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, February 1960. Average Height and Temperature, and Resultant Winds.



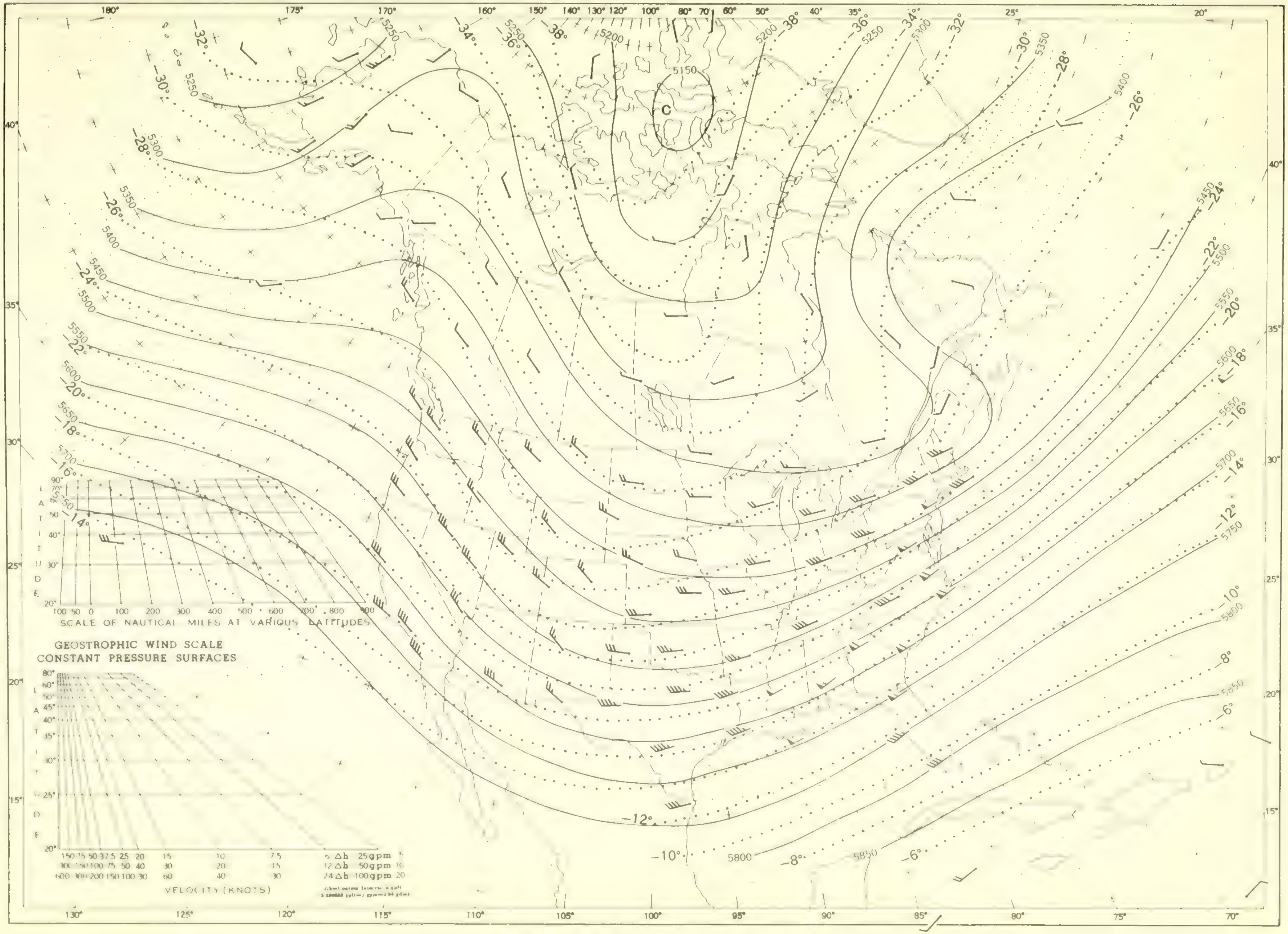
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, February 1960. Average Height and Temperature, and Resultant Winds.



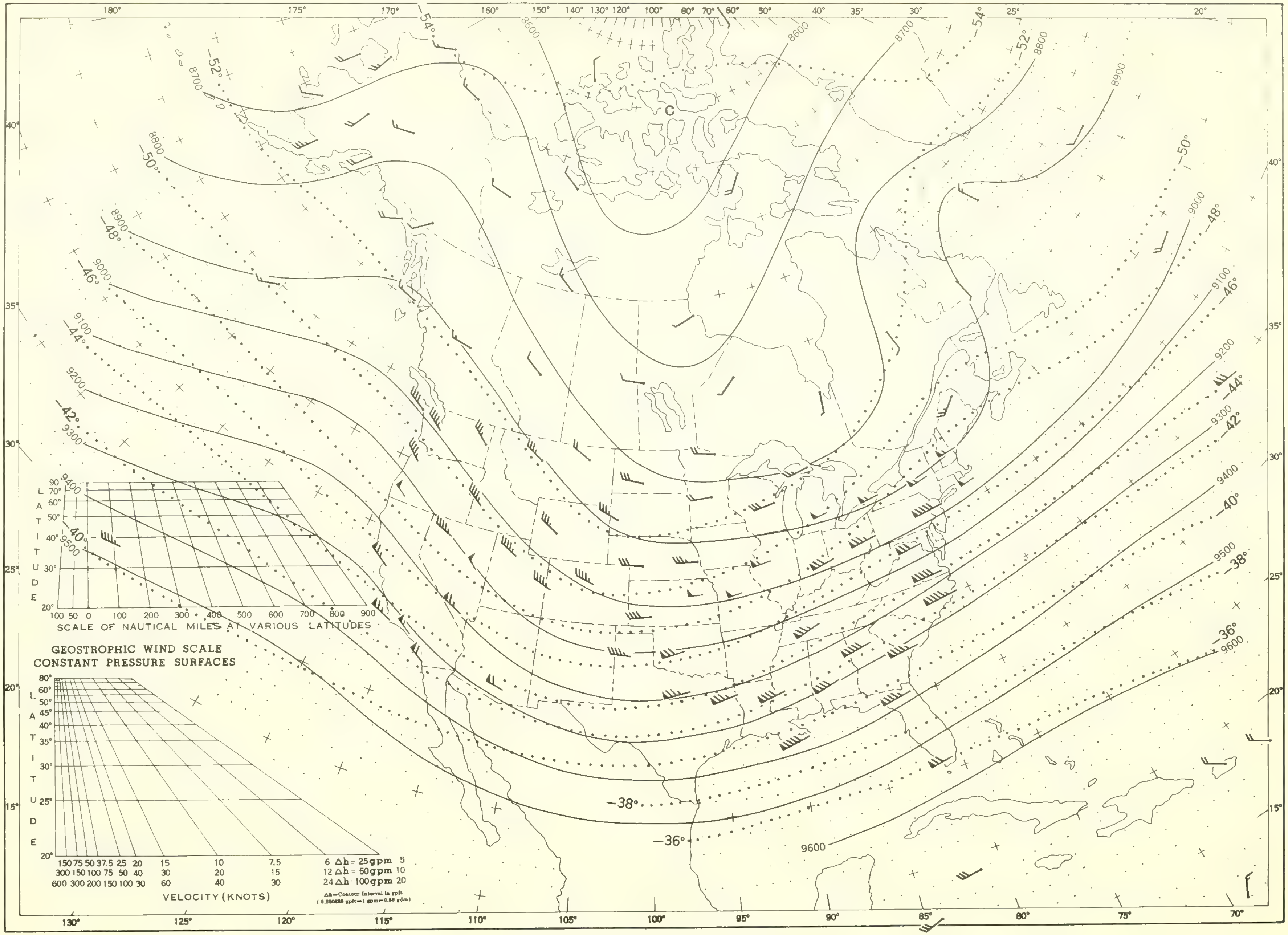
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, February 1960. Average Height and Temperature, and Resultant Winds.



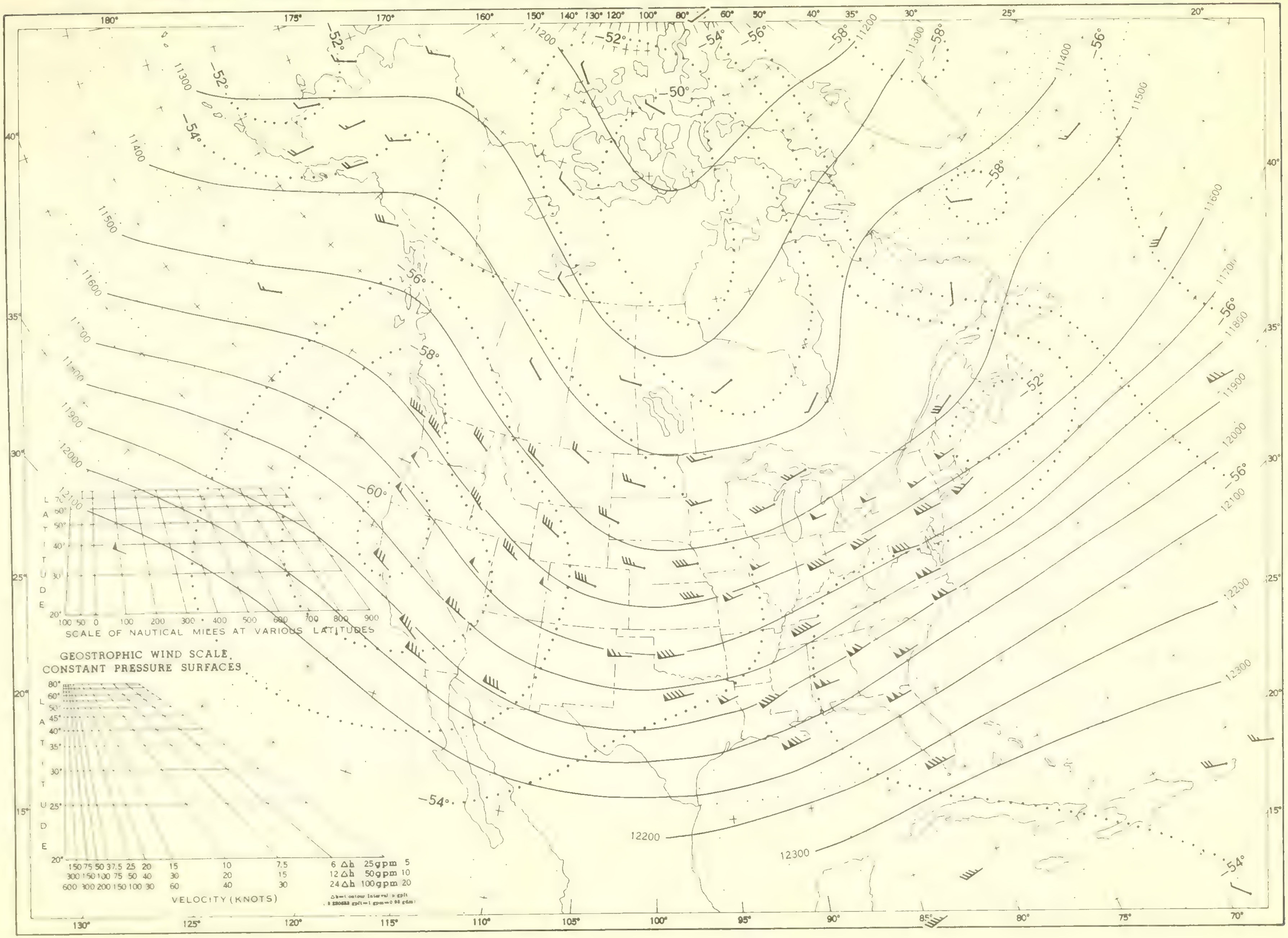
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, February 1960. Average Height and Temperature, and Resultant Winds.



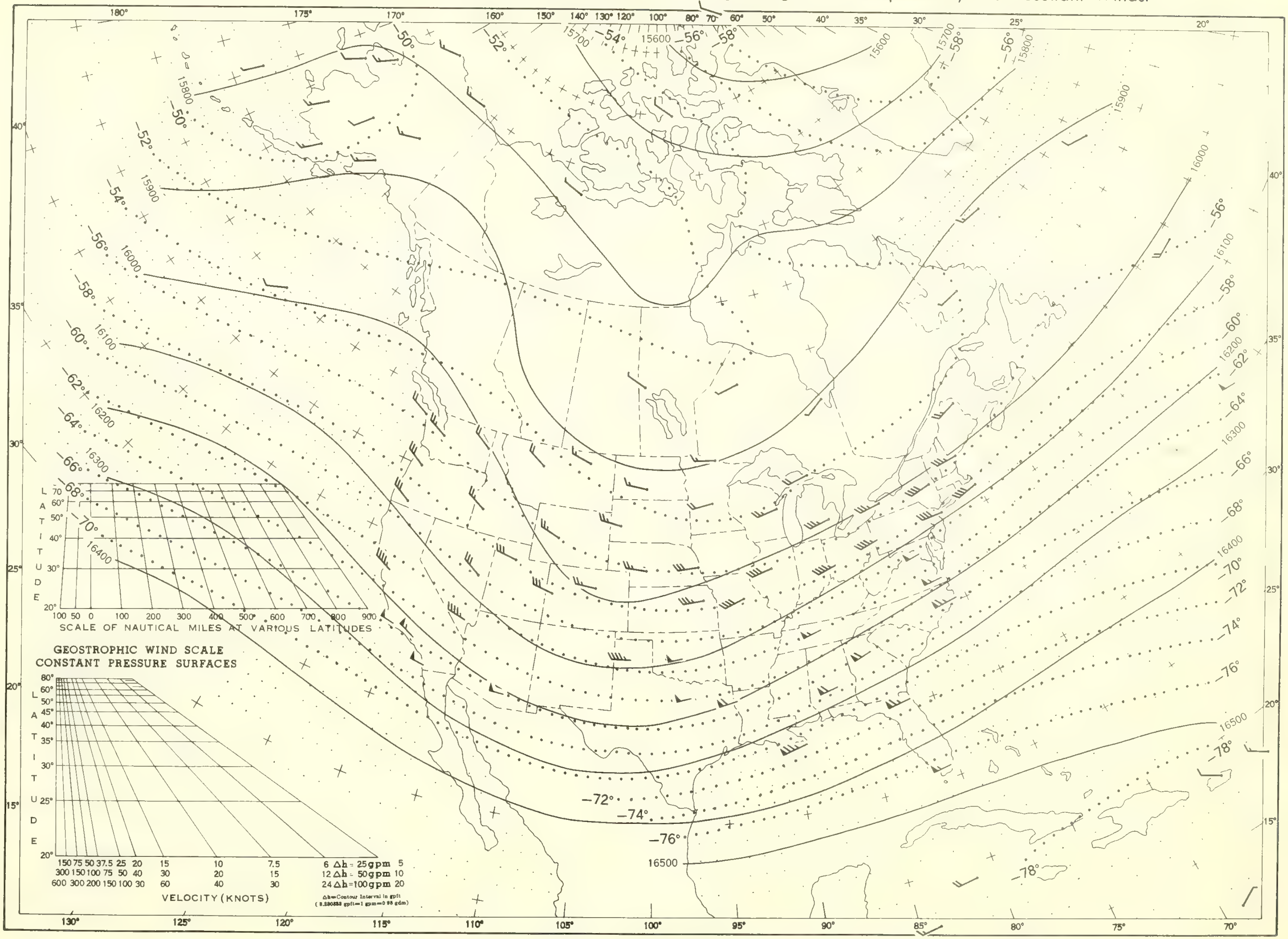
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, February 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, February 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

U. S. DEPARTMENT OF COMMERCE
FREDERICK H. MUELLER, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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MARCH 1960
Volume 11 No. 3

ASHEVILLE: 1960

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 3

MARCH 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

March 1960 was exceptionally cold and snowy east of the Rocky Mountains. Somewhat comparable conditions occurred in 1912, 1906, and 1899, and to a lesser extent in 1924. The month was warmer than normal in the Far West. Precipitation, relative to normal, was very irregularly distributed, ranging from less than 50 percent of normal in several sections to more than twice normal in parts of Florida. Snowfall in the Far West improved the mountain snowpack, but it still remained below normal in many sections at the end of the month. Flooding, mostly light, occurred during the first 3 weeks in much of the South, and the last week along many midwestern streams as a result of snowmelt. At Burlington, Iowa, the Mississippi River was frozen until the last day or two of the month and navigation opened later than ever before in history.

TEMPERATURE.--Temperatures for the month averaged below normal everywhere east of the Rockies. The most intense cold, relative to normal, was centered over the mid-Mississippi and lower Missouri and Ohio Valleys where monthly averages ranged from 14° to more than 16° below normal. At nearly all stations in an area including eastern portions of Kansas and Nebraska and extending from Iowa, Missouri, and Arkansas to the Atlantic coast, this was the coldest March on record. At Peoria, Ill., where records began in 1856, March 1960 was 5.8° colder than the previous coldest March of 1912. At St. Louis, Mo., where records began in 1837, only March 1843 was colder than March 1960. At Chicago, Ill., where records began in 1849, only March 1866 was as cold as this March. The coldest weather of the month occurred during the first week when minima fell to record low levels for March at a number of locations. Among the stations with records beginning prior to 1900 which recorded new March lows were Sioux City and Des Moines, Iowa, -22° and -15° respectively on the 5th; and Moline, Ill., Evansville, Ind., and Louisville, Ky., -19°, -9°, and -1° respectively on the 6th. The -19° recorded at the airport at Moline, Ill., equaled the lowest temperature ever before recorded in Illinois. New March lows also were recorded for Iowa, Missouri, Kentucky, Mississippi, West Virginia, Maryland, Tennessee, South Carolina, and Delaware. Numerous stations during the month reported record low temperatures for so late in the season. At some stations new lows were established for as many as 10 individual dates during the month. At Dubuque, Iowa, the maximum temperature failed to rise above 32° on 21 days, a new record, and 4 days with zero or below equaled the previous record. At Sioux City, Iowa, the temperature remained below normal every day of the month, and subzero minima were recorded on 10 days. Topeka, Kans., reported a maximum of 9° on the 4th, the lowest maximum ever recorded in March. Shreveport, La., had 9 days with freezing, a new March record there. At a number of stations March was colder than any of the winter months of 1959-1960. At Minneapolis, Minn., the daily maximum temperature was less than 32° from February 17 through March 15, a period of 27 consecutive days. At St. Joseph, Mo., the daily temperature on the 4th was 38° below normal. At St. Louis, Mo., March was the coldest month of this winter season, the first such occurrence on record; and 47 consecutive days of below normal temperatures through the 26th was another new record. At Lincoln, Nebr., March 25 ended a period of 37 consecutive days during which daily averages were 10° or more below normal. The coldest days of the month occurred in most places on the 4th, 5th, or 6th. Average daily temperatures were as much as 37° below normal in eastern Kansas on the 4th and in Iowa on the 5th, and 30° to 35° below normal over much of the remainder of the Midwest on the 5th and 6th, and 26° below normal at Birmingham, Ala., on the 5th. Scattered stations representative of the area in which this was the coldest March of record are listed below:

Station	Average Temperature March 1960	Departure From Normal	Record Began (Year)	Previous Lowest March Average Temperature	Year
Huron, S. Dak.	15.0°	-16.7°	1882	16.0°	1899
Omaha, Nebr.	23.1°	-15.1°	1873	26.8°	1899
Topeka, Kans.	27.8°	-14.8°	1888	31.6°	1912
Kansas City, Mo.	30.4°	-13.4°	1889	31.9°	1906
Little Rock, Ark.	41.3°	-11.5°	1880	43.2°	1915
Madison, Wis.	18.4°	-14.1°	1869	21.9°	1888
Springfield, Ill.	24.2°	-16.0°	1880	30.6°	1906
Lexington, Ky.	29.7°	-14.6°	1873	34.8°	1947
Indianapolis, Ind.	26.2°	-13.9°	1871	31.0°	1906
Nashville, Tenn.	36.3°	-13.5°	1871	41.3°	1915
Vicksburg, Miss.	47.9°	-10.2°	1872	48.0°	1915
Montgomery, Ala.	48.9°	-8.2°	1873	49.8°	1915
Atlanta, Ga.	41.8°	-10.9°	1879	43.6°	1915
Jacksonville, Fla.	55.4°	-6.9°	1872	55.8°	1915
Columbia, S. C.	43.8°	-11.4°	1888	46.6°	1915
Hatteras, N. C.	42.5°	-10.2°	1875	44.4°	1985
Richmond, Va.	35.9°	-11.6°	1899	40.0°	1947
Pittsburgh, Pa.	26.0°	-12.6°	1871	30.7°	1872
Cleveland, Ohio	24.0°	-12.8°	1870	24.8°	1885
Parkersburg, W. Va.	31.3°	-12.3°	1889	35.2°	1896

GENERAL SUMMARY OF WEATHER CONDITIONS—Continued

In the Far West the first week was abnormally cold, particularly in the north, but the remainder of the month was about normal to much above normal.

PRECIPITATION.--Precipitation was below normal over most of the Nation, with only some sections in the Pacific Northwest, the central Great Plains, and Southeast reporting above normal amounts. Unusually heavy amounts, however, were mostly limited to the Florida Peninsula and nearby areas of the Southeast.

In the middle portion of the Florida Peninsula monthly totals ranged up to as much as 600 percent of normal. Lakeland recorded 12.94 inches for the month, a new March record; Orlando 10.54 inches, the greatest total for March in 18 years, and Tampa 11.00 inches. At Tampa 9.35 inches fell during the period March 15-18, and measurements in Pasco County ranged up to 22 inches. These rains produced floods in the area, with damages estimated at $6 million.

SNOWFALL.--Unprecedented snowfall from Iowa and Missouri to the Virginias and Carolinas, with monthly totals exceeding 20 inches at many stations, set numerous new records for monthly falls, and depth and duration of the cover,

During the first week of March two storms, one moving from the northwestern Gulf of Mexico to the Ohio Valley and the other moving up the Atlantic coast from the Carolinas, produced light to heavy snow over most of the eastern half of the Nation. Amounts ranged from 10 to 20 inches in the Appalachians, 4 to 22 inches in New Jersey, New York, and Pennsylvania, and 20 to 30 inches in southeastern New England where the snow drifted by hurricane force winds, paralyzed normal activities.

During the second week the heaviest snowfall of record in Kentucky left 14 to 20 inches in southern portions, 12 to 16 inches in central portions, and 4 to 8 inches in northern sections of the State. The same storm produced up to 10 inches in Tennessee, an average of about 13 inches in southern Indiana, and additional heavy amounts in the southern Appalachians where accumulations, which ranged up to 3 feet, isolated many communities.

During the third week storms moving northeastward from Oklahoma and off the Georgia coast produced locally heavy snow from eastern Colorado and Oklahoma to the Great Lakes, and snow, sleet, and rain from northern Georgia to New England. Falls ranged from 5 to 11 inches in Virginia, up to 7 inches in northern Maine, 6 inches in the Catskill Mountains of New York, 5 inches in northeastern Ohio, 2 to 9 inches in Iowa, Illinois, and Wisconsin, and 10 to 15 inches in northeastern Kansas, southeastern Nebraska, and northwestern Missouri.

Snowfall for the month totaled over 20 inches in eastern portions of Kansas and Nebraska, southern Iowa, northern Missouri, southern portions of Illinois and Indiana, parts of Kentucky, from western New York State to northern Georgia, and in Rhode Island and eastern Massachusetts.

A few of the many stations which reported new March snowfall records are listed here:

Station	Total (Inches)
St. Joseph, Mo.	23.1
Columbia, Mo.	24.5
South Bend, Ind.	33.9
Cairo, Ill.	20.3
Evansville, Ind.	20.2
Louisville, Ky.	22.9
Lexington, Ky.	17.7
Pittsburgh, Pa.	21.3
Harrisburg, Pa.	22.6
Richmond, Va.	19.7
Roanoke, Va.	30.1
Charlotte, N. C.	19.3
Hatteras, N. C.	8.5
Charleston, S. C.	1.0
Atlanta, Ga.	4.8
Knoxville, Tenn.	20.2
Nantucket, Mass.	40.2

The 40.2 inches at Nantucket, Mass., was a record amount for any month. Cold weather prevented much melting until late in the month, and thus accumulations set new records in many localities. Concordia, Kans., measured an alltime record depth of 25 inches on the 16th, and Topeka, Kans., reported a similar record of 19 inches on the 15th. Other stations reporting record depths included Louisville, Ky., 9 inches; Columbia, Mo., 16 inches; St. Joseph, Mo., 18 inches; Lincoln, Nebr., 20 inches; Omaha, Nebr., 27 inches; Burlington, Iowa, 16 inches; Council Bluffs, Iowa, 27 inches; and 21 inches at South Bend, Ind., was a March record there. In the vicinity of Lincoln, Nebr., and in some other scattered localities a few roofs collapsed under the weight of the snow. At Springfield, Mo., a period of 27 consecutive days of snow cover was the longest on record for so late in the year. A period of 75 days with a cover of 1 inch or more ending at Omaha, Nebr., on the 28th and at Des Moines, Iowa, on the 29th, set new records at both places.

The heavy March snowfalls also set new seasonal records at a number of stations. Among these was 68.8 inches at Dubuque, Iowa, the greatest seasonal there in 98 years of record. Some other stations in Iowa reporting new record seasonal totals were Albia, 68.6 inches; Keosauqua, 52.3; Oskaloosa, 62.1; and Cedar Rapids, 62.4 inches.

DESTRUCTIVE STORMS.--Winter-type storms such as snow, glaze, and wind were the costliest storms during the month, accounting for losses of many millions of dollars. Glaze the first few days of the month caused losses of nearly $20 million in 10 northeastern Alabama counties, according to estimates by combined Federal and State Agencies. At the same time heavy drifting snowfall in southeastern New England was blamed for more than 40 deaths from overexertion, and snow removal expenses and other losses were expected to exceed $10 million. An outbreak of tornadoes occurred in central Florida about midmonth causing some losses.

CONDENSED CLIMATOLOGICAL SUMMARY

MARCH 1960

Section	Temperature: Monthly extremes: Station	Highest	Date	Station	Lowest	Date	Precipitation: Monthly extremes: Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Geneva	85	31	Valley Head	4	5	Highland Home	13.47	Brewton 3SSE	3.14
Arizona	2 Stations	96	21+	2 Stations	0	11+	Tonto Cr Fish Hatch	2.11	4 Stations	.00
Arkansas	8 Stations	85	31+	Mammoth Spring	1	5	Dermott	6.11	Rogers	.99
California	Cow Creek	99	26	White Mountain 2	-6	2	Cazadero	21.27	13 Stations	.00
Colorado	2 Stations	85	28+	5 Stations	-24	11+	Wolf Creek Pass 4W	5.09	Trinidad	.03
Connecticut	do	70	29+	Norfolk 2SW	-7	26	Derby	4.55	Rocky River Dam	2.00
Delaware	Lewes 1SW	83	28	Middletown 2S	1	11	Selbyville	2.91	Milford	1.18
Florida	2 Stations	92	30+	6 Stations	24	6+	Saint Leo	17.91	Royal Palm Ranger Sta	.50
Georgia	3 Stations	85	30+	Blairsville Exp Sta	1	5	West Point	9.74	Savannah USDA Pl Garden	2.26
Idaho	Riggins RS	83	26	Idaho Falls 46W WB	-38	1	Burke 2ENE	5.82	Chilly Barton Flat	T
Illinois	Harrisburg	81	29	Moline WB Airport	-19	6	Jacksonville	5.05	Kankakee 3SW	.47
Indiana	Shoals Hiway 50 Br	83	30	Paoli	-17	6	Saint Meinrad	4.33	Bluffton	.49
Iowa	Keosauqua	71	29	Atlantic 1NE	-31	5	Chariton	D3.44	Mason City FAA AP	.47
Kansas	2 Stations	87	31	Colby 1SW	-22	3	Horton 8NW	3.53	Tribune 1W	.32
Kentucky	Cynthiana 2	88	30	2 Stations	-14	6+	Mammoth Cave Park	5.78	Grant Dam 38	1.06
Louisiana	Donaldsonville	87	31	Woodworth State For	14	4	New Orleans Pine Vil	7.16	Burrwood WB	.75
Maine	2 Stations	54	31+	Squa Pan Dam	-19	26	Brunswick	6.03	Cupsuptic Storehouse	1.11
Maryland	do	84	28	Oakland 1SE	-20	11	Greenbelt	4.00	Bethesda Nat Inst Hlth	1.20
Massachusetts	do	65	31+	Stockbridge	-12	26	West Medway	5.12	Shelburne Falls	1.61
Michigan	do	72	29	Watersmeet Fish Hatch	-27	1	Higgins Lake	2.73	Iron Mountain Wtrwks	.31
Minnesota	Winona	67	30	Bigfork	-30	5	Luverne	1.99	Bigfork	.07
Mississippi	Lumberton 2N	89	31	Ripley	8	5	Leaksville	9.14	Purvis	2.26
Missouri	Warsaw No. 1	83	29+	Maryville 2E	-26	5	Fisk	5.25	Monett	.75
Montana	Hysham	81	26	Thoeny 3N	-43	3	Haugan	4.24	Big Sandy	.00
Nebraska	Cambridge	88	28	Gordon	-31	3	Fremont	D3.65	2 Stations	.13
Nevada	Mesquite	91	22+	2 Stations	-15	1	Mt Rose Highway Sta	4.07	4 Stations	.00
New Hampshire	Windham	61	31+	First Conn Lake	-23	26	Pinkham Notch	3.98	Berlin	1.14
New Jersey	5 Stations	80	29+	Layton 3NW	-5	12+	Long Branch	4.17	Wertsville	1.06
New Mexico	Cienega 5SSW	91	8	Gavilan	-20	3	Bateman Ranch	2.70	5 Stations	.00
New York	2 Stations	73	28	2 Stations	-22	11	Tannersville	4.40	Groveland	.19
North Carolina	Gatesville	85	30	Transou	-8	8	Owens Gap	11.20	Nashville	2.27
North Dakota	Fort Yates	78	27	Medora 3NNE	-33	4	Linton	1.08	2 Stations	.10
Ohio	3 Stations	80	28	3 Stations	-11	8	Hiram	3.31	[illegible]	.25
Oklahoma	Frederick	93	31	do	-6	3	Carter Tower	3.01	[illegible]	.13
Oregon	Hutchinson Ranch	87	25	Minam 7NE	-15	2	Valsetz	18.91	[illegible]	.52
Pennsylvania	Phil Drexel Inst of Tec	82	28	2 Stations	-20	11+	Tamaqua 4N Dam	4.75	[illegible] WB Airport	.63
Puerto Rico	3 Stations	93	19+	Garzas Dam	50	27+	Rio Blanco Upper	8.93	Saint Just	.76
Rhode Island	2 Stations	61	28	Kingston	1	11	Newport	4.02	Block Island WBAP	1.91
South Carolina	do	83	29+	Caesars Head	1	5	Caesars Head	9.91	Hilton Head	2.14
South Dakota	do	80	26	Marcus 8NNW	-32	4	Wagner	2.86	Ralph 1N	.06
Tennessee	Clarksville	83	28	Mountain City 2	-11	13	Roan High Knob	9.93	Greenville 5SSW	1.35
Texas	Rio Grande City 2ESE	98	30	Miami	-5	3	Henderson	4.36	5 Stations	.00
Utah	St George Ph	86	22+	Woodruff	-15	2	Alta	10.15	2 Stations	T
Vermont	Bennington 2NW	68	31	2 Stations	-19	26	Manchester Center	4.39	Gilman	.72
Virginia	Wakefield	87	29	Burkes Garden	-10	14	Pennington Gap	6.06	Goshen	1.60
Washington	Packwood	85	21	Chesaw 4NNW	-17	3	Cougar 6E	15.79	Chief Joseph Dam	.30
West Virginia	3 Stations	81	30+	Kumbrabow State Forest	-22	9	Canaan Valley	7.05	Washington Dam 19	.95
Wisconsin	Beloit	67	29	Gordon 2ESE	-31	5	West Allis	4.06	Spring Valley	.03
Wyoming	Deaver	82	22	Sunshine	-34	2	Bondurant 3NW	3.33	Riverton	.00

+ And also on an earlier date or dates.

D Water equivalent of snowfall wholly or partly estimated, using a ratio of 1 inch water equivalent to every 10 inches of new snowfall.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F or above	No. of days: Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max. depth on ground	Average hourly speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F	°F	°F.		°F.		=		°F	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	994.3	1020.4	55	34	44.2	-9.6	75	31+	14	5	0	16	32	67	6.31	0.00	2.64	12	2	T	0	11.3	N	36	W	22	8	8	15	6.6	50
Huntsville	605	997.0	1021.0	50	32	40.9	----	79	28	12	5	0	20	29	67	8.31	----	3.50	14	2	2.9	1	9.8	N	*28	ESE	15	7	7	17	7.0	--
Mobile	211	1017.4	1019.8	64	44	53.8	-5.7	80	30	25	4	0	5	39	62	5.27	-2.35	1.91	12	8	.0	0	12.8	N	*29	NW	3+	12	6	13	5.5	--
Montgomery	195	1011.5	1020.0	59	39	48.9	-8.2	78	28	21	5	0	6	35	62	5.52	-.98	2.28	12	5	.0	0	10.5	N	34	N	11	9	7	15	6.2	61
ALASKA																																
Anchorage	90	1002.7	1007.7	30	12	21.0	-3.8	41	27+	-4	7	0	31	9	60	.22	-.38	.15	3	0	5.1	15	9.6	NNE	*29	NE	19+	11	8	12	5.3	67
Annette	110	1005.4	1009.2	42	34	37.9	-.2	51	20	27	5+	0	13	30	77	23.57	14.89	3.66	25	0	24.2	7	13.0	SE	*33	SE	16	2	2	27	9.0	--
Barrow	22	1026.8	1027.5	-2	-17	-9.4	5.5	29	1	-41	19	0	31	-20	60	.07	-.05	.03	5	0	.7	13	13.2	E	*58	W	1	11	9	11	5.1	--
Barter Island	39	1025.4	1027.2	-5	-18	-11.3	3.0	26	1	-38	10	0	31	-18	70	.12	-.14	.10	3	0	1.2	14	20.3	W	*75	W	4	10	7	14	5.8	--
Bethel	125	1015.6	1016.3	17	0	8.5	-3.0	43	23	-13	15	0	31	-1	67	.02	-.90	.02	1	0	.4	8	18.2	NNE	*45	NNE	28	20	4	7	3.1	--
Cold Bay	90	1008.1	1011.9	31	21	25.9	-3.8	42	1	10	19+	0	29	20	78	.65	-1.24	.11	15	0	11.7	5	16.9	NNW	*39	NNW	6	2	5	24	8.2	--
Cordova	40	1003.7	1005.2	38	22	30.2	.1	47	3	-1	14	0	28	23	77	5.02	-.90	1.39	15	0	53.9	15	6.7	ESE	*40	E	22	5	5	21	7.4	--
Fairbanks	436	1001.0	1019.0	18	-10	4.2	-4.8	43	24+	-29	6	0	31	-9	54	.20	-.38	.16	4	0	4.4	17	7.8	NNE	*25	NNE	27+	18	5	8	4.0	--
Juneau	17	1008.5	1009.1	37	27	31.9	-.9	44	24+	16	9	0	24	23	72	4.84	1.37	1.23	18	0	17.9	6	10.4	ESE	*35	ESE	12	4	1	26	8.6	33
King Salmon	44	1007.8	1009.5	26	9	17.6	-3.7	45	27	-6	10	0	31	8	67	.04	-1.18	.02	3	0	.4	T	16.0	NNW	*53	NNW	5	15	9	7	3.8	--
Kotzebue	10	1023.4	1023.9	14	-3	5.4	7.0	31	1	-17	19	0	31	-4	68	T	-.27	T	0	0	T	18	11.0	E	*41	W	4	18	9	4	3.5	--
McGrath	334	1003.7	1017.1	19	-9	4.9	-2.4	45	23	-25	13+	0	31	-10	50	T	-.98	T	0	0	.2	26	7.9	N	*20	N	29+	22	5	4	2.6	--
Nome	13	1021.3	1021.9	21	1	10.9	2.4	37	25	-22	18	0	31	3	68	T	-.91	T	0	0	T	26	9.4	NE	*35	NE	20+	16	8	7	4.0	72
Shemya	122	1005.4	1009.2	37	31	34.3	----	40	30+	25	21	0	18	30	85	1.85	----	.32	19	0	4.7	4	23.8	SE	*58	WSW	22	0	3	28	9.3	--
St. Paul Island	22	1015.9	1017.3	30	20	24.8	.3	39	2	9	17	0	30	21	81	.08	-1.09	.08	2	0	.8	1	----	---	--	---	--	4	8	19	7.3	--
Yakutat	28	1005.8	1006.7	39	23	30.8	.0	48	31	8	14	0	27	22	71	9.57	-.32	2.77	17	0	59.4	45	9.9	E	*31	ENE	20	5	5	21	7.5	--
ARIZONA																																
Flagstaff	6993	------	------	55	24	39.4	5.0	67	22	14	11+	0	28	--	--	.66	-.91	.40	4	1	4.5	13	----	---	--	---	--	14	7	10	4.5	--
Phoenix	1109	975.3	1014.4	79	51	65.1	5.2	89	21+	41	16	0	0	38	40	.57	-.09	.57	1	1	.0	0	6.6	E	*22	WSW	23+	15	10	6	4.0	95
Prescott	5014	847.3	1016.1	66	34	49.9	5.1	78	21	21	17	0	11	25	43	.15	-.83	.10	2	1	.0	0	9.9	SW	42	S	30	12	13	6	4.3	85
Tucson	2584	925.8	1014.0	77	45	61.0	3.1	87	21	30	17	0	2	29	34	.25	-.43	.24	3	1	.0	0	9.0	SE	31	N	23	14	11	6	3.7	93
Winslow	4880	851.3	1014.5	67	35	50.8	5.3	79	30	20	17	0	12	21	37	.36	-.04	.19	4	0	.5	T	11.0	WSW	*51	SW	13	15	7	9	4.3	--
Yuma	199	1009.1	1014.6	86	54	69.8	4.1	96	21+	44	2	8	0	32	29	.03	-.23	.03	1	0	.0	0	7.3	N	23	N	16	17	10	4	3.3	92
ARKANSAS																																
Fort Smith	458	1003.4	1021.0	52	31	41.5	-10.8	84	31+	15	3	0	20	30	68	1.43	-1.66	.56	11	2	2.5	2	9.7	ENE	41	SW	29	5	13	13	6.7	52
Little Rock	257	1007.5	1021.1	50	33	41.3	-11.5	83	29	17	5	0	19	29	67	3.67	-1.18	.94	9	0	5.4	3	9.6	NE	28	W	29+	4	13	14	6.5	51
Texarkana	361	------	1020.2	55	37	45.9	-10.1	84	31+	20	3	0	10	--	--	2.35	-2.58	1.04	8	1	T	T	9.7	ENE	--	---	--	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	1001.0	1019.4	72	47	59.5	2.4	88	21+	37	2	0	0	45	61	.16	-.95	.10	4	0	.0	0	5.1	NW	*29	NNW	30+	10	6	15	5.9	--
Bishop	4108	874.4	1015.6	72	31	51.6	4.2	82	25	18	10	0	16	--	--	.03	-.63	.02	3	0	.0	0	----	---	--	---	--	11	10	10	5.2	--
Blue Canyon	5280	840.2	1018.3	50	35	42.4	3.7	71	23	22	2	0	17	--	--	12.37	4.91	3.00	13	0	15.8	19	9.9	SSW	45	ENE	16	7	5	19	6.7	--
Burbank	699	990.9	1017.4	72	50	60.9	4.0	88	19	42	2	0	0	44	60	.18	-2.07	.17	3	0	.0	0	4.1	S	*28	WNW	31	8	12	11	5.7	--
Eureka (U)	43	1017.6	1020.0	55	46	50.5	1.4	70	6	33	10	0	0	--	--	8.13	3.49	1.60	18	0	.0	0	7.9	⦶ S	29	SW	27	2	4	25	8.6	30
Fresno	331	1006.8	1018.8	70	44	56.8	1.3	89	20	33	2	0	0	44	67	.67	-.96	.54	4	0	.0	0	6.7	NW	22	NW	8	11	6	14	5.7	74
Long Beach	34	1017.3	1018.3	69	50	59.3	----	86	18	42	2	0	0	51	78	.22	----	.18	3	0	.0	0	6.0	WNW	*20	W	15+	6	12	13	6.1	--
Los Angeles (U)	312	------	------	71	53	62.0	3.1	89	19	46	2	0	0	48	69	.31	-2.05	.22	3	0	.0	0	5.9	⦶ W	33	NW	31	10	15	6	4.8	73
Los Angeles	99	1013.9	1017.9	64	51	57.5	1.0	82	19	42	2	0	0	49	77	.21	-1.70	.21	2	0	.0	0	7.5	WSW	*21	N	31+	7	13	11	6.2	--
Mt. Shasta (U)	3544	893.3	1018.6	55	33	43.7	2.0	77	24	19	10+	0	12	--	--	4.86	.78	1.05	13	1	12.4	6	----	---	--	---	--	10	6	15	5.9	--
Oakland	3	1019.6	1020.1	63	48	55.7	2.3	79	18	38	10	0	0	46	73	1.24	-1.07	.34	9	0	.0	0	9.1	WNW	*26	WNW	1	6	8	17	6.8	--
Point Arguello	367	1005.1	1018.5	60	46	53.0	----	77	18	39	29	0	0	--	--	.29	----	.16	5	0	.0	0	9.4	---	*29	NW	13	6	5	20	6.9	--
Red Bluff	341	1005.8	1018.8	66	45	55.6	1.3	92	23	34	1	1	0	41	63	2.45	-.16	.97	7	2	.0	0	11.7	SSE	42	SE	5	7	7	17	6.8	62
Sacramento	17	1018.3	1019.2	66	47	56.3	2.4	81	20	36	2	0	0	45	69	1.43	-.66	.46	11	1	.0	0	9.1	SSW	36	NW	16	6	7	18	6.7	60
Sandberg (R)	4517	863.9	1016.6	59	41	50.3	5.6	75	21	28	2	0	3	--	--	.08	-1.73	.04	2	0	.0	0	14.9	N	*53	N	15	10	14	7	4.9	--
San Diego	19	1014.2	1017.5	68	52	60.0	1.8	82	19+	48	29+	0	0	49	72	.55	-.97	.26	5	0	.0	0	5.6	WNW	18	SW	28	12	8	11	5.4	58
San Francisco(U)	52	------	------	61	50	55.8	.9	77	18	46	10+	0	0	--	--	2.06	-.72	.65	9	1	.0	0	8.2	⦶ W	29	W	30	--	--	--	----	62
San Francisco	8	1019.3	1020.2	62	48	54.9	2.1	76	18	39	10	0	0	47	79	1.17	-1.27	.36	8	0	.0	0	10.8	WNW	36	WNW	1	6	9	16	6.8	--
Santa Maria	238	1010.5	1019.5	65	44	54.8	.8	83	18	37	11+	0	0	45	74	.90	-1.39	.46	4	0	.0	0	7.3	WNW	*26	WNW	15+	10	7	14	5.9	--
COLORADO																																
Alamosa	7536	769.1	1017.0	49	18	33.5	1.7	64	30+	-9	3	0	31	--	--	.10	-.33	.06	3	0	1.7	1	----	---	--	---	--	10	13	8	5.5	--
Colorado Springs	6173	808.7	1017.9	48	23	35.6	-1.2	73	26	-8	1	0	25	18	56	.95	.26	.43	8	0	8.6	5	10.6	NNE	*33	N	16	9	13	9	5.5	--
Denver	5292	835.8	1016.7	50	26	38.1	.3	75	26	-8	3	0	18	19	50	.89	-.30	.36	7	0	9.0	7	11.0	SSW	34	NW	9	10	9	12	5.6	73
Grand Junction	4849	859.1	1017.2	53	31	42.4	1.2	72	26	12	3	0	15	23	51	1.06	.19	.35	8	2	5.9	8	8.7	ESE	41	SW	28	10	7	14	5.7	75
Pueblo	4639	855.7	1017.4	53	24	38.4	-1.6	78	27+	-8	3	0	22	23	61	.76	.06	.49	5	0	4.0	4	8.2	W	43	N	31	9	12	10	5.4	74
CONNECTICUT																																
Bridgeport	7	1015.9	1016.6	39	25	32.1	-4.8	70	28	13	11	0	26	19	62	2.02	-1.58	1.35	6	1	9.8	8	12.1	N	--	---	--	7	12	12	6.2	--
Hartford	169	1009.6	1015.8	37	19	28.3	-8.9	61	28	4	11	0	28	18	68	2.50	-1.31	1.31	10	0	16.9	13	9.3	NW	35	NW	25	7	10	14	6.3	58
New Haven	6	1015.4	------	39	24	31.7	-5.4	68	28	12	26+	0	27	--	--	2.46	-1.66	1.40	9	1	15.9	12	10.4	---	36	NW	25	8	8	15	6.2	68
DELAWARE																																
Wilmington	78	1014.2	1017.7	41	25	32.8	-9.7	79	28	9	11	0	25	21	66	1.71	-1.90	.72	11	0	13.4	8	12.0	WNW	38	WNW	4	11	6	14	6.0	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	43	29	35.9	-9.8	81	28	17	11+	0	23	--	--	3.11	-.25	1.25	10	--	----	--	----	---	--	---	--	--	--	--	----	--
Wash. Nat'l. AP	14	1014.1	1018.8	43	28	35.6	-9.7	80	28	15	11	0	24	22	61	2.08	-.95	.93	8	0	17.1	8	12.8	NW	49	NW	24	9	10	12	5.7	62
FLORIDA																																
Apalachicola (U)	13	1017.4	------	63	47	55.2	-5.7	77	16	30	6	0	2	--	--	3.93	-.99	1.16	6	6	.0	0	9.4	---	28	W	19	14	9	8	4.4	70
Daytona Beach	31	1017.9	1019.8	69	48	58.4	-5.3	86	30	32	6	0	1	47	73	7.52	3.90	4.26	7	5	.0	0	10.5	NNE	*35	SW	30	13	7	11	5.0	--
Fort Myers	15	1018.3	------	76	53	64.5	-4.1	86	29	39	22+	0	0	--	--	1.87	-.31	1.35	5	5	.0	0	9.8	---	*46	SW	18	13	12	6	4.5	--
Jacksonville	24	1018.1	1019.7	67	44	55.4	-6.9	84	30	28	6	0	4	42	68	6.94	3.52	3.03	9	3	.0	0	10.7	NW	33	N	11	12	11	8	4.9	68
Key West	4	1017.6	------	75	65	69.8	-3.9	86	31	55	4	0	0	--	--	1.21	-.36	.83	5	3	.0	0	11.6	---	28	N	4	15	11	5	4.4	79
Lakeland (U)	214	------	------	71	52	61.5	-5.1	84	29	36	4	0	0	--	--	12.94	9.14	6.96	7	6	.0	0	8.0	---	--	---	--	11	12	8	5.2	70
Miami	7	1017.5	1018.9	77	58	67.6	-3.7	86	16	44	4	0	0	56	69	.67	-1.58	.36	3	2	.0	0	9.0	ESE	*28	WSW	31	9	15	7	4.7	--
Miami Beach	9	------	------	76	62	69.2	-3.0	84	31+	47	4	0	0	--	--	.67	-1.62	.32	3	--	.0	0	----	---	¢38	¢NW	¢31	¢14	¢12	¢5	¢4.2	¢65
Orlando	106	1015.0	1019.8	72	50	60.9	-5.8	86	30	35	6	0	0	48	70	10.54	7.28	5.03	8	6	.0	0	11.3	NNE	*35	N	15	13	8	10	4.9	--
Pensacola (U)	13	------	------	63	47	54.9	-5.3	78	30	29	4	0	3	--	--	5.79	-.21	1.78	9	6	.0	0	†12.7	---	26	W	19+	--	--	--	----	58
Tallahassee	64	1016.5	1019.4	66	43	54.5	-6.0	79	31+	28	6	0	5	39	62	4.03	-1.04	1.54	7	7	.0	0	8.3	NNW	27	WSW	19	12	6	13	5.4	--
Tampa	19	1018.0	1019.7	72	52	62.1	-3.9	85	27	37	4	0	0	50	72	11.00	7.88	5.20	8	7	.0	0	10.3	N	*35	WNW	17	12	11	8	4.7	69
West Palm Beach	15	1018.1	1019.4	76	56	65.9	-4.1	89	16	42	23	0	0	55	70	1.59	-1.63	.89	5	4	.0	0	11.3	NNW	*40	WNW	11	11	14	6	4.7	--
GEORGIA																																
Athens	798	996.3	1020.2	51	31	40.7	-12.0	76	30	13	5	0	20	30	69	4.73	-.44	2.11	10	3	8.4	5	10.0	NW	*24	WNW	22	12	5	14	5.8	--
Atlanta	975	977.0	1020.2	51	33	41.8	-10.9	77	30	10	5	0	18	29	66	5.26	-.41	1.60	9	4	4.8	4	12.6	NW	*36	WNW	22	7	10	14	6.4	51
Augusta	143	1012.6	1019.8	55	34	44.6	-10.9	78	27	20	6	0	18	31	65	5.51	1.25	3.46	10	2	.7	1	8.2	W	*29	W	3	10	8	13	5.8	--
Columbus	385	1004.8	------	58	36	46.6	-8.1	81	30	19	6+	0	13	--	--	7.22	1.41	4.01	11	3	T	0	10.0	---	*40	SW	30	9	9	13	5.9	--
Macon	356	1005.8	1019.9	58	36	46.6	-11.2	82	30	19	6+	0	15	32	63	6.83	1.72	3.28	11	2	T	0	10.2	NNW	36	N	2	12	5	14	5.5	57
Rome	637	996.5	------	51	29	40.0	-11.7	80	28	8	5	0	24	26	65	5.90	.07	2.79	11	4	8.3	2	6.5	---	--	---	--	9	9	13	6.2	--
Savannah	48	1016.9	1019.9	58	37	47.8	-10.9	79	31+	20	6	0	13	35	67	2.69	-.80	.70	10	3	.0	0	10.2	WNW	29	NW	21	11	7	13	5.7	60
Thomasville	283	------	------	64	42	53.2	-7.4	81	29+	24	6	0	5	--	--	3.81	-1.54	1.12	9	3	T	0	----	---	--	---	--	--	--	--	----	--
HAWAII																																
Hilo	31	1014.6	1015.9	79	63	71.1	.3	84	17	59	26	0	0	63	78	7.13	-8.59	1.82	20	1	.0	0	8.9	SW	*30	N	7	4	11	16	7.1	35

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature								No. of days		Average dew point	Average relative humidity	Precipitation			No of days		Snow, Sleet		Wind		Fastest mile			No of days (sunrise to sunset)			Sky cover tenths sunrise to sunset	Possible sunshine
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below			Total	Departure from normal	Greatest in 24 hours	01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft	Mb	Mb.	°F	°F	°F.	°F	°F		°F				°F	%	In.	In	In			In.	In	M p h		M p h			0-3	4-7	8-10	0-10	%
HAWAII (Cont'd.)																																
Honolulu	7	1015.9	1016.4	81	67	73.7	0.7	89	17	59	12	0	0	62	71	1.48	-0.82	0.75	6	[illegible]	0.0	0	9.6	NE	[illegible]	NE	2[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	72
Lihue	115	1011.5	1016.6	77	65	71.1	.5	85	8	56	12	0	0	63	78	9.72	5.65	4.74	20	0	.0	0	11.6	NE	34	NE	24	[illegible]	[illegible]	[illegible]	7.0	41
IDAHO																																
Boise	2842	921.4	1018.8	53	33	42.9	1.1	74	25	13	1	0	13	32	67	1.39	[illegible]	.52	15	0	3.5	1	9.5	SE	28	NW	1[illegible]	[illegible]	[illegible]	21	7.2	[illegible]
Idaho Falls 46W (R)	4933	848.6	1020.7	41	15	27.9	-2.1	62	26+	-28	1	0	31	--	--	.71	.26	.25	5	0	5.2	11	7.4	WNW	*31	SW	9	--	--	--	--	--
Idaho Falls 42NW (R)	4790	------	------	40	10	25.0	-3.7	62	25	-38	1	0	31	--	--	.25	-.20	.12	5	--	---	--	4.0	N	*28	SW	20					-
Lewiston	1413	965.8	1018.1	54	34	43.7	.1	76	25+	17	2	0	11	--	--	1.45	[illegible]	.40	15	1	5.2	1	----	---	--	---	--	[illegible]	[illegible]	20	7.[illegible]	-
Pocatello	4444	863.2	1019.0	49	27	37.7	1.1	69	26	-8	2	0	25	28	71	.94	-.19	.28	1[illegible]	0	3.1	1	13.[illegible]	SW	56	W	30	6	6	19	7.[illegible]	66
ILLINOIS																																
Cairo (U)	314	1007.5	------	43	28	35.4	-13.6	78	29	6	5	0	25	--	--	2.29	-2.43	.68	11	1	20.3	8	9.3	N	39	SW	29	8	8	17	[illegible]	61
Chicago (O'Hare)	656	994.6	1020.5	32	17	24.4	----	71	29	-1	6	0	27	18	74	1.17	----	.42	10	1	13.[illegible]	11	12.0	WNW	*46	NNW	21	[illegible]	10	16	7.[illegible]	--
Chicago (Midway)	610	997.0	1020.5	34	19	26.4	-10.6	73	29	2	6+	0	27	19	73	1.15	-1.70	.54	10	1	14.0	7	12.8	NW	42	NW	22	[illegible]	10	16	6.8	54
Moline	589	998.3	1021.8	30	10	19.9	-17.3	65	29	-19	6	0	26	16	78	1.28	-1.20	.40	14	1	14.7	15	9.1	WNW	31	E	15	6	8	17	6.8	52
Peoria	654	998.0	1021.6	31	14	22.6	-15.7	70	29	-10	6	0	26	18	78	3.24	.45	2.08	14	3	16.9	10	11.3	WNW	30	NW	24	9	9	1[illegible]	6.4	[illegible]
Rockford	728	992.6	1021.3	32	13	22.5	-12.5	66	29	-7	6	0	28	17	77	2.23	-.32	1.51	13	2	9.7	1[illegible]	9.3	NNW	*3[illegible]	W	21	[illegible]	11	1[illegible]	[illegible]	--
Springfield	589	997.3	1021.8	33	15	24.2	-16.0	75	29	-12	5	0	26	19	78	4.09	.78	2.66	13	2	20.3	1[illegible]	12.4	E	4[illegible]	NW	30	8	9	1[illegible]	[illegible]	[illegible]
INDIANA																																
Evansville	383	1004.4	1021.0	40	21	30.2	-16.4	79	29+	-9	6	0	27	21	69	2.87	-1.42	.96	10	1	20.2	13	11.2	NW	42	NW	3	8	7	16	6.[illegible]	63
Fort Wayne	801	987.8	1020.4	34	15	24.3	-12.5	71	29	-4	6+	0	27	18	76	.96	-2.20	.38	13	1	7.9	7	10.9	W	56	W	22	[illegible]	10	16	6.8	77
Indianapolis	793	989.2	1020.6	35	18	26.2	-13.9	76	29	-6	6	0	27	18	70	1.62	-2.27	.49	11	1	9.3	9	10.0	WSW	32	NW	22	[illegible]	11	15	6.7	69
South Bend	768	990.5	1019.9	33	15	23.7	-12.0	70	29	-2	6	0	28	18	77	2.15	-.80	.65	18	0	33.9	21	11.9	SW	*38	NW	22	[illegible]	9	17	7.1	--
IOWA																																
Burlington	694	995.3	1022.3	33	14	23.3	-15.2	69	29	-13	5	0	26	17	75	2.97	.16	.80	14	2	25.7	16	11.6	NW	38	N	30	7	8	16	6.5	70
Des Moines	948	990.2	1023.1	30	13	21.4	-15.6	60	29	-15	5	0	28	17	80	1.46	-.57	.54	16	1	15.8	18	11.3	NW	31	NW	29	6	7	18	7.0	48
Dubuque	1065	995.3	1022.0	29	11	20.0	-13.3	55	29	-10	6	0	29	14	75	2.10	-.15	.65	12	2	15.6	21	----	---	--	---	--	5	9	17	6.9	--
Sioux City	1094	980.0	1022.9	27	9	17.9	-17.1	46	27	-22	5	0	29	16	87	2.17	.91	.58	16	1	18.5	23	11.1	SE	33	NW	18	7	4	20	7.3	47
Waterloo	870	988.2	1021.9	29	8	18.7	-15.4	51	29	-19	7	0	28	16	82	1.56	-.43	.69	13	1	12.4	11	9.5	NW	*32	NNW	22	10	4	17	6.6	--
KANSAS																																
Concordia (U)	1375	969.5	------	36	20	27.9	-13.7	75	31+	-6	3	0	26	--	75	2.03	.70	.57	13	2	22.7	25	8.2	NW	30	NW	29	5	10	16	7.0	52
Dodge City	2594	930.9	1019.6	45	24	34.1	-8.5	83	28	-12	3	0	25	26	79	1.91	.76	.71	10	2	10.8	10	16.7	SSE	54	N	31+	8	8	15	6.3	63
Goodland	3645	887.6	1018.2	44	21	32.4	-4.1	78	27	-20	3	0	24	24	76	.51	-.58	.18	9	0	7.1	12	13.9	S	*46	NNW	29	5	14	12	6.1	-
Topeka	877	984.4	1022.0	37	18	27.8	-14.8	77	28	-5	6	0	26	21	73	2.23	.20	.56	11	2	22.1	19	12.1	E	38	N	29	8	5	18	7.1	37
Wichita	1321	970.5	1020.7	43	25	33.8	-11.5	81	31+	-2	3	0	25	25	74	1.18	-.56	.33	9	3	10.3	11	13.6	NNW	52	NW	29	9	7	15	6.5	48
KENTUCKY																																
Lexington	979	982.2	1020.9	39	21	29.7	-14.6	75	29+	-2	6+	0	26	22	74	1.49	-2.97	.30	10	1	17.7	13	8.4	SW	--	---	--	9	8	14	6.2	--
Louisville	474	1000.8	1020.8	42	24	32.5	-13.1	85	28	-1	6	0	26	22	66	2.42	-2.25	.66	10	1	22.9	9	10.0	NW	39	SW	30	9	8	14	6.0	55
LOUISIANA																																
Alexandria	107	------	1019.9	62	39	50.5	----	85	31	22	4	0	7	42	77	4.13	----	2.00	9	4	.0	0	8.5	NE	--	---	--	8	6	17	6.7	--
Baton Rouge	64	1016.6	1019.8	66	45	55.4	-4.9	83	31	26	4	0	4	44	70	.95	-4.87	.37	5	2	.0	0	10.1	NE	--	---	--	9	5	17	6.4	--
Lake Charles	12	1018.0	1019.6	63	46	54.6	-6.0	81	30	29	4	0	1	44	73	.84	-3.92	.63	5	2	.0	0	10.5	ENE	*28	NNW	3	8	4	19	6.8	--
New Orleans (U)	9	------	------	66	50	57.8	-5.2	82	31	31	4	0	1	--	69	4.76	-1.80	1.88	7	5	.0	0	6.3	---	18	NW	19	10	8	13	5.7	53
New Orleans	3	984.8	1019.5	66	46	56.2	-5.5	80	24	31	6+	0	2	46	73	3.68	-2.22	2.53	5	2	.0	0	10.6	ENE	*27	WSW	2	10	5	16	6.0	--
Shreveport	252	1010.8	1020.4	58	39	48.5	-9.7	86	31	23	4	0	9	35	66	4.04	-.66	2.77	9	3	T	T	10.3	ENE	--	---	--	8	7	16	6.7	46
MAINE																																
Caribou	624	989.1	1013.4	30	13	21.5	-.2	42	31	-9	26	0	31	16	77	2.38	-.02	1.17	16	0	18.9	33	12.2	NW	35	NNW	9	1	6	24	8.6	--
Portland	61	1009.8	1013.9	36	19	27.4	-4.1	52	28	-5	26	0	29	20	73	3.27	-.76	1.38	11	0	21.1	18	10.5	NW	36	N	4	8	5	18	6.9	58
MARYLAND																																
Baltimore (U)	14	------	------	43	29	35.7	-9.6	82	28	16	11	0	24	--	--	2.55	-1.08	.95	8	-	----	--	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1013.4	1018.5	42	24	33.4	-9.8	81	28	6	11	0	25	20	61	2.82	-.81	1.08	9	1	21.6	9	11.7	WNW	48	NW	24	11	7	13	5.8	56
Frederick	294	------	------	41	21	31.1	-12.2	77	28	-1	11	0	27	--	--	1.57	-1.74	.49	8	--	19.2	8	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.	629	988.7	------	37	21	29.0	----	58	28	4	11	0	28	--	69	4.55	.68	2.83	10	--	33.9	30	16.3	NW	50	NNE	4	--	--	--	----	--
Boston	15	1009.0	1014.0	40	26	32.7	-4.9	62	28	10	11	0	24	20	62	3.23	-.20	1.88	7	0	22.3	19	15.0	NW	45	NE	4	7	7	17	6.7	59
Nantucket	43	1013.0	1013.8	37	26	31.8	-4.8	50	30+	13	11	0	25	23	71	4.85	.80	2.21	11	0	40.2	19	16.2	NW	59	N	4	5	9	17	7.2	64
Pittsfield	1153	------	------	33	15	23.7	-7.1	58	31	-5	26	0	29	--	--	2.11	-1.11	1.04	11	--	13.7	14	----	---	--	---	-	--	--	--	----	--
Worcester	986	976.1	1014.0	34	19	26.1	-7.1	54	31	2	26	0	28	13	59	3.96	.53	1.44	10	0	26.6	26	10.9	WNW	35	N	4	6	8	17	6.8	--
MICHIGAN																																
Alpena	689	993.9	------	31	4	17.3	-10.1	54	27	-17	9	0	31	11	68	1.48	-.73	.73	13	[illegible]	8.4	16	6.3	NW	32	E	16	12	4	15	6.0	53
Detroit(City AP)	619	991.9	1019.8	34	19	26.3	-8.8	71	30	5	6	0	27	17	69	1.13	-1.40	.41	13	1	11.5	10	12.1	NW	12	NW	22	5	9	17	6.8	50
Detroit (M. Wayne Co.)	630	994.6	1019.8	34	17	25.6	----	71	30	3	8+	0	27	18	71	.92	----	.31	14	1	9.6	7	12.3	SW	--	---	--	4	10	17	7.1	--
Detroit (Willow Run)	722	989.8	1019.4	35	18	26.8	-8.7	70	30	7	11+	0	27	17	69	.76	-1.59	.31	10	0	7.6	6	13.7	NW	*38	NNW	22+	5	9	17	7.2	[illegible]
Escanaba (U)	594	997.0	------	30	11	20.2	-6.0	45	27	-3	8	0	31	--	69	.74	-1.04	.28	8	1	6.1	11	10.5	---	42	N	30	7	[illegible]	1[illegible]	6.1	66
Flint	761	995.9	1019.9	31	11	21.3	-11.1	65	30	-8	8	0	29	16	77	1.99	-.20	1.17	16	1	13.8	9	10.0	SW	*30	NW	22	7	8	16	6.7	--
Grand Rapids	681	993.9	1020.2	33	15	23.9	-8.6	65	29	-1	4+	0	28	17	75	1.09	-1.26	.26	15	1	13.2	12	10.0	E	32	NW	22+	5	11	15	6.8	66
Lansing	852	986.1	1020.0	33	11	22.0	-11.2	66	30+	-5	11	0	27	16	76	.92	-1.65	.21	14	1	7.5	11	13.0	W	56	NW	22	7	9	15	6.7	51
Marquette (U)	677	992.9	------	29	14	21.1	-5.8	49	29	5	25+	0	31	--	73	1.58	-.47	.52	13	0	30.9	34	8.0	W	38	NW	21	5	9	17	7.0	58
Muskegon	627	995.9	1020.3	33	16	24.3	-8.1	66	29	-2	8	0	28	17	74	1.33	-.85	.30	15	2	19.0	17	10.2	ENE	*10	W	21	5	6	20	7.2	--
Sault Ste. Marie	721	996.6	1020.6	27	9	18.2	-4.8	42	27	-7	25	0	31	11	73	.90	-.95	.31	8	1	7.4	24	8.6	WNW	*23	NW	21+	10	6	15	6.0	64
MINNESOTA																																
Duluth	1409	978.3	1022.2	27	7	17.1	-5.1	45	27	-11	5	0	31	8	67	.23	-1.55	.08	7	1	2.2	18	12.[illegible]	NW	57	NW	2[illegible]	7	[illegible]	[illegible]	7.2	6[illegible]
Intern'l Falls	1179	979.3	1023.0	27	3	14.9	-5.1	37	31+	-21	5	0	31	7	67	.40	-.63	.15	8	1	3.5	11	7.[illegible]	N	*42	WNW	2[illegible]	6	8	[illegible]	6.8	-
Minneapolis	830	987.1	1022.7	30	10	19.8	-11.1	59	29	-16	7	0	28	13	71	.81	-.67	.42	9	0	5.5	4	9.1	SW	34	NW	21	9	9	13	5.8	58
Rochester	1017	982.7	1022.7	30	8	18.9	-11.5	62	29	-17	5	0	29	13	76	.74	-.81	.16	10	0	7.8	7	10.1	NNW	--	---	--	9	8	14	6.[illegible]	--
St. Cloud	1034	982.7	1023.0	29	6	17.6	-9.3	53	29	-17	7	0	30	11	73	.75	-.40	.34	8	0	4.4	3	----	---	--	---	--	9	6	16	6.1	-
MISSISSIPPI																																
Jackson	305	1007.6	1020.2	57	38	47.5	-9.3	81	31+	21	4	0	9	36	68	5.22	-1.01	3.41	14	7	T	0	7.3	NW	32	W	29	7	[illegible]	17	6.7	13
Meridian	294	1006.0	1020.3	59	37	47.8	-8.7	80	31	21	5	0	10	37	69	7.26	.68	2.90	9	4	T	0	8.8	NE	21	WSW	19	11	1[illegible]	[illegible]	6.1	
Vicksburg (U)	234	1010.3	------	56	39	47.9	-10.2	80	31	24	6	0	7	--	--	5.43	-.60	3.23	12	6	T	T	8.2	---	34	NW	29	7	7	[illegible]	[illegible]	41
MISSOURI																																
Columbia	778	991.5	1021.4	37	21	28.7	-14.1	78	29	-9	5	0	26	21	74	2.19	-.82	.67	14	1	24.5	16	11.7	WNW	41	NW	19	9	7	15	[illegible]	60
Kansas City	741	985.1	1021.6	38	23	30.4	-13.4	77	29+	0	5	0	26	21	69	3.11	.60	.75	12	2	29.3	21	9.6	WNW	30	SW	27	7	6	18	6.9	47
St. Joseph	809	991.2	------	35	16	25.7	-16.2	75	28	-11	5	0	27	--	--	2.98	.77	.98	11	2	23.1	18	12.5	--	*10	NNW	29	6	8	17	6.8	-
St. Louis (RFC)	465	------	------	38	25	31.4	-13.9	76	29+	2	5	0	26	--	--	2.59	-1.05	.85	10	--	17.8	12	----	---	--	---	--	--	--	--	---	--
St. Louis	552	1000.7	1021.6	38	23	30.3	-14.1	78	29+	-5	5	0	26	23	74	2.77	-.65	1.08	12	1	22.3	11	11.8	WNW	35	SE	29+	9	9	13	6.2	53
Springfield	1265	971.6	1020.9	42	23	32.5	-12.4	79	28	-1	4	0	26	24	74	1.37	-1.79	.33	14	0	12.5	11	13.0	W	6[illegible]	SW	29	7	6	18	7.1	55

See footnotes at end of table.

CLIMATOLOGICAL DATA

MARCH 1960

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Ø										No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft	Mb	Mb.	°F	°F	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
MONTANA																																
Billings	3567	890.6	1017.8	47	23	35.0	0.9	77	26	-17	2	0	20	19	58	0.53	-0.40	0.12	14	0	5.1	2	10.9	SW	34	NW	28	2	10	19	7.5	71
Butte	5530	828.0	1020.4	41	12	26.4	-.8	64	22	-20	2	0	31	17	--	.75	-.03	.26	9	0	7.3	5	6.7	S	*29	NW	8	4	7	20	7.5	--
Glasgow	2277	942.8	1020.1	34	12	22.8	-5.6	71	26	-27	3	0	28	17	79	.27	-.33	.14	7	1	.9	3	----	---	--	---	--	3	12	16	7.4	--
Great Falls	3664	887.6	1017.7	43	20	31.3	-1.2	72	20	-23	3	0	22	16	58	.15	-.84	.07	6	0	1.9	4	9.6	SW	38	SW	26	5	10	16	7.0	85
Havre (U)	2488	927.2	1019.0	41	16	28.1	-2.2	73	26	-24	3	0	25	--	--	.11	-.59	.04	6	0	3.3	3	8.5	Φ NE	34	SW	26	5	6	20	7.1	61
Helena	3893	872.7	1018.7	45	21	32.6	.4	72	26	-15	2	0	25	19	58	.22	-.50	.15	7	0	4.5	4	9.3	W	40	W	26	4	9	18	7.2	77
Kalispell	2965	------	------	38	17	27.3	-6.4	56	25+	-29	3	0	27	--	--	1.11	.10	.26	14	1	8.8	15	----	---	--	---	--	5	4	22	7.8	--
Miles City	2629	932.3	1020.0	42	16	29.1	-2.1	78	26	-25	3	0	24	20	--	.68	-.02	.20	9	1	3.1	6	9.1	NW	*29	NW	28+	2	12	17	7.3	--
Missoula	3200	902.5	1019.9	44	22	32.9	-1.8	70	25	-8	2	0	27	24	72	.72	-.11	.32	11	0	7.2	5	6.3	ESE	34	W	26	4	4	23	7.9	45
NEBRASKA																																
Grand Island	1841	952.3	1021 4	34	15	24.7	-12.9	72	27	-21	4	0	27	20	79	1.44	.16	.34	11	1	14.6	14	11.4	NW	--	---	--	4	6	21	7.6	--
Lincoln (U)	1166	------	------	33	17	24.9	-14.5	72	28	-10	4	0	27	--	--	2.03	.56	.46	11	1	17.8	20	10.4	NW	31	S	28+	4	8	19	7.5	46
Norfolk	1544	963.1	1021.5	29	11	19.8	-15.1	53	27	-20	4	0	29	15	75	2.68	1.13	.55	11	1	20.8	28	----	---	--	---	--	6	6	19	7.5	--
North Platte	2779	916.7	1019.3	39	17	28.0	-8.4	79	27	-22	3	0	28	21	75	.92	.01	.33	10	2	10.6	8	11.6	SSE	59	NW	29	5	4	22	7.7	42
Omaha	978	980.4	1022.6	31	15	23.1	-15.1	57	28+	-14	5	0	29	18	79	2.07	.75	.51	13	1	22.7	27	12.4	NNW	40	NW	30+	5	6	20	7.4	38
Omaha N.Omaha AP	1323	971.6	------	29	13	21.0	-14.9	56	28	-16	4	0	28	--	--	2.26	.94	.46	14	1	23.3	33	----	---	--	---	--	5	7	19	7.5	--
Scottsbluff	3950	878.1	1017.6	47	21	33.9	-1.0	77	26	-16	3	0	28	21	64	.35	-.53	.12	10	2	5.5	3	13.8	NW	*44	NW	29	3	11	17	7.2	--
Valentine	2587	925.5	------	37	13	24.8	-8.5	78	26	-27	4	0	29	--	79	.64	-.61	.22	6	0	6.8	8	10.6	S	42	N	29	3	11	17	7.4	60
NEVADA																																
Elko	5075	845.2	1018.3	53	27	40.0	3.9	72	23+	5	2+	0	28	26	60	1.63	.94	.55	13	0	2.8	T	5.0	SW	*26	WNW	30	8	6	17	6.5	--
Ely	6257	808.3	1016.5	53	25	39.3	4.0	69	23+	7	2	0	28	21	52	.77	-.52	.45	4	1	5.1	1	11.0	S	42	S	27	11	4	16	5.9	85
Las Vegas	2162	949.2	1014.7	74	46	59.7	3.2	86	26	35	17+	0	0	25	31	.05	-.30	.05	1	0	.0	0	9.7	SW	*41	SW	30	11	11	9	4.7	87
Reno	4404	862.9	1018.2	61	27	44.3	3.7	78	25	15	1	0	24	28	57	.59	-.11	.39	5	0	T	T	7.6	S	54	S	30	7	11	13	6.5	83
Winnemucca	4299	869.3	1018.6	58	27	42.4	3.0	77	25+	5	2	0	20	25	52	.68	-.18	.22	10	1	.5	1	7.7	S	33	W	30	10	3	18	6.7	36
NEW HAMPSHIRE																																
Concord	339	1003.0	1014.8	38	18	27.6	-4.2	56	31	-4	26	0	29	18	67	2.48	-.56	.87	9	0	12.1	16	9.5	NNW	30	NW	2	6	11	14	6.3	58
Mt. Washington Obs.	6262	794.6	------	12	-1	5.4	-6.6	40	31+	-24	11	0	29	--	93	4.54	-1.01	1.22	21	0	27.1	11	38.5	NW	94	E	4	3	4	24	8.0	37
NEW JERSEY																																
Atlantic City(U)	10	------	------	39	27	33.0	-8.5	71	28	13	11	0	24	--	--	2.07	-1.46	----	10	--	----	--	----	---	--	---	--	--	--	--	----	61
Atlantic City	58	1014.4	1017.3	40	24	32.3	-9.2	78	28	9	11	0	25	21	68	3.67	.32	1.11	11	2	13.4	7	15.4	WNW	37	ENE	3	12	6	13	5.7	--
Newark	11	1015.4	1016.8	42	26	33.9	-6.6	72	28	14	11	0	25	19	59	2.98	-.80	1.30	8	2	19.0	14	12.5	NW	38	WNW	25	10	10	11	5.8	--
Trenton (U)	56	1009.1	------	40	26	33.1	-8.2	75	28	14	11	0	26	--	--	1.85	-1.35	.80	12	1	11.8	8	11.7	---	34	S	30	11	8	12	5.5	66
NEW MEXICO																																
Albuquerque	5310	847.6	1013.7	63	36	49.9	3.9	75	30+	22	1	0	11	22	39	.44	.00	.23	4	0	2.8	2	8.6	N	50	NW	31	15	8	8	4.4	78
Clayton	4969	843.9	1015.2	57	25	41.0	-.5	78	27	-3	3	0	21	--	--	.32	-.34	.09	5	2	1.4	1	----	---	--	---	--	9	8	14	5.5	--
Raton	6379	803.3	1014.2	55	23	38.9	.8	72	30+	1	1	0	29	--	--	.20	-.44	.07	7	1	1.5	2	----	---	--	---	--	11	9	11	5.5	--
Roswell	3612	892.3	1013.9	68	34	51.1	.4	86	8	16	3	0	14	25	45	.04	-.49	.04	2	0	T	T	12.4	---	65	W	31	13	7	11	5.0	--
NEW YORK																																
Albany	277	1013.1	1016.7	35	18	26.5	-6.6	65	31	-1	12	0	28	17	69	1.69	-.64	.77	10	0	18.3	13	10.6	WNW	36	W	1	9	6	16	6.5	65
Binghamton	1590	854.6	1016.6	30	16	22.8	-8.3	55	31	1	11	0	28	15	74	1.56	-1.43	.42	14	0	16.1	13	9.9	N	42	W	24	3	11	17	7.2	49
Buffalo	693	989.6	1019.0	32	16	24.1	-8.9	69	30	-2	12	0	28	17	75	2.35	-.37	.48	13	1	19.5	13	12.0	SW	34	W	27	8	8	15	6.6	53
New York (U)	10	1014.4	------	41	27	33.5	-7.2	70	28	15	11	0	24	--	--	2.94	-.62	1.10	9	2	13.6	14	16.4	---	57	NW	25	11	8	12	5.7	67
New York	19	1014.6	1016.5	40	27	33.9	-6.6	71	28	15	11	0	21	20	60	3.36	-.14	1.37	9	1	18.8	15	16.2	NW	45	W	1	8	11	12	6.1	--
Rochester	543	998.5	1018.8	31	14	22.4	-10.6	65	30	-5	12+	0	29	15	74	1.64	-1.32	.48	10	0	33.0	29	11.7	WSW	37	W	24	9	9	13	6.4	68
Schenectady	217	------	------	36	22	29.1	-3.4	63	31	8	11	0	27	--	--	2.00	-.69	.67	10	0	20.3	18	----	---	--	---	--	--	--	--	3.7	--
Syracuse	424	994.8	1018.0	33	16	24.4	-9.8	61	30	1	9	0	29	16	70	2.48	-.76	.51	15	0	22.9	20	8.8	WSW	35	W	21	6	10	15	6.6	60
NORTH CAROLINA																																
Asheville (U)	2203	698.3	------	43	24	33.5	-13.3	71	27	5	6+	0	26	--	--	3.97	.40	1.72	12	0	28.9	14	10.1	---	34	NW	22	6	10	15	6.5	53
Cape Hatteras(R)	9	1017.4	1018.3	49	36	42.5	-10.2	72	29	25	5	0	15	33	73	4.68	.79	1.32	13	1	8.5	4	13.1	NNE	--	---	--	13	6	12	5.4	66
Charlotte	725	990.2	1019.4	50	29	39.7	-11.3	82	28	10	6	0	22	25	31	4.93	.84	1.92	8	1	19.3	9	10.6	NE	35	NW	22	11	7	13	5.7	63
Greensboro	891	986.7	1020.0	45	25	35.1	-13.1	80	28	5	6	0	26	22	64	4.78	1.13	1.66	8	0	21.3	15	10.3	ENE	30	NW	3	11	7	13	5.6	65
Raleigh	433	1004.9	1019.4	47	28	37.6	-12.5	81	28	11	6	0	26	24	63	4.94	1.34	1.75	10	4	14.0	10	9.1	WNW	29	WNW	22	8	11	12	5.5	57
Wilmington	30	1017.6	1019.0	53	34	43.7	-11.0	81	28	20	7	0	17	32	70	7.44	3.99	3.31	9	2	6.2	5	13.2	NW	43	SE	3	13	7	11	5.1	55
Winston-Salem	967	982.9	1019.5	46	27	36.4	-12.1	80	28	12	5	0	25	20	55	4.43	.60	1.50	8	1	21.3	14	10.0	NW	42	WNW	3	12	6	13	5.5	--
NORTH DAKOTA																																
Bismarck	1650	959.4	1022.7	29	11	20.1	-6.6	74	26	-15	13+	0	29	17	87	.67	-.09	.22	9	0	11.7	8	13.2	WNW	43	NW	18	5	6	20	7.3	45
Devils Lake (U)	1471	966.1	------	24	4	13.6	-9.0	47	26	-21	4	0	31	--	80	.60	-.13	.13	11	0	7.6	11	7.9	N	29	N	21	3	9	19	7.7	59
Fargo	895	987.5	1023.9	25	6	15.5	-9.8	48	26	-18	4	0	31	10	78	.11	-.78	.03	5	0	2.4	3	14.2	N	56	N	21	4	9	18	7.3	54
Williston (U)	1877	950.2	1021.2	31	12	21.6	-4.9	72	26	-20	4	0	29	14	72	.28	-.47	.09	7	0	1.8	3	7.2	SE	27	W	26	6	5	20	7.5	53
OHIO																																
Akron	1210	980.0	1019.7	33	15	24.1	-12.4	73	30	-1	11+	0	27	18	78	1.63	-1.53	.58	15	1	20.9	14	12.2	NW	--	---	--	5	7	19	7.0	--
Cincinnati Obs.	761	------	------	40	22	30.8	-12.5	78	29+	5	1	0	27	--	--	1.32	-2.75	.39	11	1	12.5	7	7.4	---	26	SW	22	--	--	--	----	47
Cincinnati	869	987.2	1020.5	39	21	29.7	-12.0	76	29+	2	6	0	27	19	65	1.14	-2.90	.29	14	1	12.8	5	9.9	WSW	76	SW	30	4	10	17	7.2	--
Cleveland	787	989.8	1019.5	32	16	24.0	-12.8	75	30	-3	11	0	28	19	77	2.06	-.83	.85	17	1	19.5	14	11.2	SW	37	W	22	4	5	22	7.7	43
Columbus (U)	724	------	------	37	22	29.0	-12.1	73	29	5	8	0	27	--	--	1.09	-2.13	.46	11	--	10.0	5	----	---	--	---	--	--	--	--	----	--
Columbus	815	989.2	1020.5	37	20	28.4	-11.4	75	29	-2	8	0	27	18	65	1.11	-2.32	.27	12	0	10.8	5	9.7	NW	40	NW	22	6	7	18	6.9	50
Dayton	1002	982.3	1020.4	35	18	26.7	-13.1	73	29	1	8+	0	27	19	72	1.21	-2.03	.53	10	0	13.3	5	12.1	WNW	45	W	22	4	12	15	6.9	72
Mansfield	1296	------	------	32	16	23.9	----	70	30	-2	8	0	27	--	--	1.16	----	.38	15	1	14.8	10	----	---	--	---	--	5	7	18	6.9	--
Sandusky (U)	603	996.3	------	35	19	26.7	-10.8	74	30+	4	8	0	27	--	--	1.13	-1.76	.56	10	1	12.6	13	9.6	---	42	NW	22	10	10	11	5.5	64
Toledo	676	993.6	1020.2	35	17	25.7	-10.1	72	29	-1	8	0	27	18	73	1.01	-1.85	.53	8	0	11.2	9	9.0	WSW	34	NW	22	5	10	16	6.7	53
Youngstown	1178	974.6	1019.1	33	16	24.3	-12.1	72	30+	2	11+	0	27	16	72	1.34	-2.11	.45	15	0	20.6	9	12.2	NW	*32	WNW	24	6	5	20	7.4	--
OKLAHOMA																																
Oklahoma City	1280	975.3	1020.4	49	30	39.7	-10.0	85	31	3	3	0	18	30	74	.85	-1.24	.31	11	2	3.2	5	13.3	SSE	56	W	29	4	11	16	6.8	47
Tulsa	672	995.3	1020.8	49	28	38.4	-11.5	86	31	4	3	0	22	29	74	1.06	-1.55	.29	8	2	3.0	6	10.6	NNE	32	SE	31	5	10	16	6.8	42
OREGON																																
Astoria	8	1016.3	1016.8	52	38	44.8	-.5	68	19	24	1	0	7	40	83	7.40	-.87	1.37	19	2	5.9	6	9.6	S	*35	S	29	2	4	25	8.5	--
Burns (U)	4140	873.4	1018.0	51	27	39.2	.3	74	25	5	1	0	25	28	68	2.00	1.23	.53	14	0	10.2	5	----	---	--	---	--	8	8	15	6.4	--
Eugene	361	1004.4	1018.2	56	38	46.8	.1	71	21	24	1	0	5	--	--	9.81	5.95	1.62	19	0	3.9	4	8.8	---	*35	SW	29	5	5	21	7.8	--
Meacham	4050	------	------	44	29	36.4	2.4	68	25	4	2	0	18	--	--	3.08	-.58	.52	17	0	30.4	36	----	---	--	---	--	6	2	23	7.6	--
Medford	1312	970.2	1018.6	61	37	49.2	2.0	81	23+	23	1	0	3	39	73	4.40	2.88	.92	15	0	T	0	5.0	NW	*28	SSW	29	7	3	21	6.9	--
Pendleton	1492	963.1	1017.8	54	34	44.0	-1.2	78	25	14	3	0	11	33	68	1.95	.77	.43	15	0	4.3	3	9.7	SE	*54	W	15	7	3	21	7.2	--
Portland	21	1011.9	1017.6	53	37	45.0	-1.6	73	19	22	1	0	8	38	77	4.77	1.30	1.15	18	0	2.6	2	8.9	E	42	SW	29	3	4	24	8.4	31
Roseburg	505	999.3	1018.3	60	39	49.5	2.6	81	19	25	1	0	3	--	--	6.46	3.53	1.33	19	0	.0	0	4.7	---	22	SW	29	3	6	22	7.9	33
Salem	195	1010.8	1018.4	53	35	44.4	-2.4	69	24+	19	1	0	8	39	82	6.99	2.80	1.26	19	1	8.5	7	7.4	S	*30	S	29	3	5	23	8.0	--
Sexton Summit(R)	3836	883.5	1018.0	47	34	40.7	1.4	71	24	18	1	0	17	--	--	8.97	6.01	2.19	18	0	20.7	9	12.7	S	--	---	--	7	5	19	7.1	--
PACIFIC AREA																																
Canton Island	8	1008.8	1009.2	89	78	83.6	.5	91	31+	75	29	11	0	74	78	.74	-1.18	.21	9	0	.0	0	15.7	ENE	*29	ENE	29+	0	4	27	9.3	--
Guam (R)	361	------	------	85	71	77.9	-.1	88	31+	62	16	0	0	--	--	1.73	-.85	.68	13	0	.0	0	7.4	Φ E	19	E	30+	--	--	--	----	58
Johnston Island	7	1013.5	1014.1	80	73	76.6	----	82	31+	69	29+	0	0	69	80	5.27	----	2.61	13	0	.0	0	12.7	---	26	E	27+	0	19	12	7.0	73

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground) Ft.	Pressure Ø Station Mb	Pressure Sea level Mb.	Temperature Average maximum °F	Temperature Average minimum °F	Temperature Average °F.	Temperature Departure from normal °F.	Temperature Highest °F	Temperature Date	Temperature Lowest °F	Temperature Date	Temperature No. of days Max 90° F or above	Temperature No. of days Min 32° F or below	Average dew point °F	Average relative humidity %	Precipitation Total In.	Precipitation Departure from normal In	Precipitation Greatest in 24 hours In	Precipitation No. of days .01 inch or more	Precipitation No. of days With thunderstorms	Snow, Sleet Total In.	Snow, Sleet Max depth on ground In.	Wind Average hourly speed M p. h.	Wind Prevailing direction	Wind Fastest mile Speed M p. h	Wind Fastest mile Direction	Wind Fastest mile Date	No. of days (sunrise to sunset) Clear 0–3	No. of days (sunrise to sunset) Partly cloudy 4–7	No. of days (sunrise to sunset) Cloudy 8–10	Sky cover, tenths (sunrise to sunset) 0–10	Possible sunshine %
PACIFIC AREA (Cont'd.)																																
Koror (R)	94	1007.1	1010.9	87	76	81.4	0.5	89	27+	73	19	0	0	75	83	3.75	-3.93	1.50	12	0	0.0	0	6.8	ENE	18	NE	1	0	4	27	9.0	--
Majuro	10	1009.8	1010.1	86	77	81.5	-----	88	3	73	28+	0	0	74	78	11.17	----	2.15	18	0	.0	0	11.7	ENE	29	E	28	0	11	20	8.1	75
Ponape (R)	120	1004.7	1010.0	86	75	80.6	-1.0	90	7	72	26+	1	0	75	83	15.81	4.45	2.88	24	2	.0	0	4.6	E	19	E	17	0	5	26	9.1	48
Truk, Moen Is.	5	1009.8	1010.1	86	77	81.7	.4	89	11	74	17	0	0	75	81	7.43	.80	1.96	17	2	.0	0	7.4	NNE	21	NE	16	0	5	26	9.3	59
Wake Island	11	1013.2	1013.6	84	73	78.8	.9	87	21	69	14+	0	0	68	72	.52	-.88	.13	8	0	.0	0	11.7	ENE	*28	ENE	1	14	12	5	4.4	--
Yap (R)	55	1008.8	1010.8	86	77	81.4	-.1	89	19	73	31+	0	0	74	80	4.22	-.49	1.51	10	1	.0	0	7.7	---	19	NE	28	0	2	29	9.5	88
PENNSYLVANIA																																
Allentown	376	1003.0	1017.8	39	21	29.5	-8.4	68	31	1	7	0	27	18	66	2.58	-.61	1.34	10	1	21.3	11	14.5	WNW	40	W	24+	10	10	11	6.0	--
Erie	732	------	1019.0	32	17	24.6	-9.5	69	30	-1	11	0	28	18	76	.63	-2.16	.24	13	0	11.3	9	13.7	SW	55	SE	16	3	13	15	7.0	--
Harrisburg	335	1003.8	1018.3	40	24	32.0	-8.8	72	28	11	7	0	26	16	55	2.52	-.35	1.06	14	0	22.6	9	10.0	WNW	36	W	24	7	10	14	6.4	57
Philadelphia (U)	35	------	------	43	28	35.1	-8.4	80	28	15	11	0	22	--	--	-----	----	----	--	--	----	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1012.5	1017.3	41	24	32.7	-9.6	80	28	9	7	0	27	20	63	1.96	-1.36	.83	12	0	12.2	8	11.3	NW	39	NW	4	10	6	15	6.1	62
Pittsburgh (U)	749	------	------	43	28	35.1	-8.4	80	28	15	11	0	22	--	--	-----	----	----	--	--	----	--	----	---	--	---	--	-	-	--	----	--
Pittsburgh	1151	987.8	1019.5	34	18	26.0	-12.6	74	30	-1	9	0	27	16	66	2.06	-1.14	1.04	19	1	21.3	13	10.4	WNW	31	W	22	4	6	21	7.7	72
Reading (U)	266	1005.2	------	41	26	33.1	-8.5	72	28	12	7	0	26	--	--	2.13	-1.18	.98	7	1	16.4	12	13.5		40	E	17	8	10	13	6.1	63
Scranton	940	982.2	1018.0	33	18	25.3	-11.0	60	30	1	12+	0	27	16	67	1.49	-1.34	.68	13	1	22.3	14	9.1	NW	28	NW	25	3	13	15	6.8	63
Williamsport	527	998.8	1018.6	38	19	28.5	-9.8	64	28	4	7	0	28	16	63	2.95	-.39	.94	10	1	23.2	14	10.7	W	30	SSE	30	6	10	15	6.5	--
RHODE ISLAND																																
Block Island	110	1009.1	------	38	27	32.4	-4.7	60	28	15	11	0	25	--	--	1.91	-1.63	.86	9	0	13.7	11	----	---	--	---	--	9	8	14	6.2	--
Providence	55	1008.5	1014.9	39	24	31.5	-5.3	61	28	8	11	0	26	19	63	2.48	-1.10	1.05	12	0	21.6	18	12.5	N	43	N	4	8	10	13	6.1	57
SOUTH CAROLINA																																
Charleston (U)	9	------	------	54	40	47.0	-11.1	77	31	26	6	0	8	--	--	3.49	.11	.97	11	--	1.0	1	11.7	---	32	NE	15	--	--	--	----	--
Charleston	41	1017.8	1020.0	56	36	46.3	-10.9	79	28+	21	6	0	14	33	67	2.72	-.90	.85	13	1	.5	1	10.3	WNW	39	W	22	10	8	13	5.7	69
Columbia	217	1006.3	1019.7	55	33	43.8	-11.4	80	27	18	6	0	17	29	62	6.17	2.38	3.59	11	2	3.2	2	9.1	NNW	*31	WSW	22	10	8	13	5.6	63
Florence	146	1012.8	1019.0	54	33	43.3	-12.1	80	29	19	6	0	19	28	61	3.39	-.15	1.11	10	3	6.2	4	8.7	N	*26	SW	22	10	8	13	5.7	--
Greenville	1018	981.1	1019.3	50	31	40.2	-11.3	77	28	12	5	0	21	24	59	5.65	1.14	2.00	9	2	15.3	6	9.4	NE	37	W	22	10	8	13	5.5	58
Spartanburg	801	989.0	1019.2	50	30	40.0	-11.7	78	28	13	5	0	23	25	60	4.28	-.21	1.95	7	2	13.6	6	9.9	NW	31	S	30	10	9	12	5.5	--
SOUTH DAKOTA																																
Huron	1282	973.2	1023.3	24	6	15.0	-16.7	42	29	-24	4	0	30	13	85	.67	-.42	.22	10	0	10.8	13	12.4	SSE	29	S	31+	6	7	18	7.2	57
Rapid City	3165	901.5	1019.8	39	17	28.0	-3.3	79	26	-15	3	0	24	19	73	.78	-.28	.15	12	0	7.4	5	12.5	NNW	42	NW	29	4	9	18	7.2	56
Sioux Falls	1420	968.8	1022.6	28	8	17.7	-14.3	52	29+	-19	5	0	30	11	71	1.90	.55	.66	12	0	20.4	17	10.9	ESE	*30	NNW	18	7	6	18	6.8	--
TENNESSEE																																
Bristol	1519	963.5	1019.8	43	24	33.5	-13.2	75	30	3	6	0	27	22	68	3.34	-.43	1.11	16	1	27.9	13	8.3	WNW	24	WNW	22	3	9	19	7.4	--
Chattanooga	670	991.8	1020.4	48	30	39.0	-11.7	77	28	8	5	0	22	26	66	6.36	.31	3.38	11	2	10.1	4	7.7	NNE	33	W	19	7	7	17	7.1	46
Knoxville	950	983.6	1020.2	46	28	36.8	-12.6	75	28	6	5	0	23	24	64	4.78	-.05	2.06	10	2	20.2	9	9.0	NE	38	SW	19	3	10	18	7.6	48
Memphis (U)	271	------	------	47	32	39.7	-12.7	78	29	12	5	0	19	--	--	4.46	-.74	1.35	14	--	9.1	4	----	---	--	---	--	--	--	--	----	--
Memphis	263	1006.2	1021.5	49	32	40.2	-11.8	78	29	15	5	0	20	27	63	4.20	-1.39	1.38	13	2	6.4	4	10.0	NW	27	W	19	5	8	18	7.0	48
Nashville	577	1000.1	1020.8	45	27	36.3	-13.5	78	28	5	5	0	25	27	75	4.37	-.91	1.41	14	5	16.1	6	8.6	NW	37	W	30	5	8	18	6.9	47
Oak Ridge	905	985.6	------	45	27	35.9	-12.2	72	28	8	5	0	24	--	--	5.23	-.46	1.60	11	1	21.0	12	5.3	---	‡37	---	30	4	9	18	7.3	--
TEXAS																																
Abilene	1759	955.6	1018.0	63	37	49.8	-5.3	92	31	16	3	1	12	35	63	.27	-.85	.21	4	1	T	T	11.6	S	42	NW	15	9	8	14	6.3	54
Amarillo	3590	888.6	1016.6	56	28	42.3	-3.8	80	28+	0	3	0	22	26	60	1.66	.62	1.37	5	1	.5	1	13.7	SW	52	NW	15	10	13	8	5.1	72
Austin	615	996.3	1018.8	64	45	54.3	-6.0	87	29	27	3	0	2	43	71	1.37	-1.17	.83	6	1	.0	0	10.0	N	33	N	10	9	3	19	6.7	47
Brownsville	16	1014.6	1017.4	73	56	64.3	-3.7	84	29	39	4	0	0	57	81	1.10	-.01	.50	8	0	.0	0	11.4	SSE	36	S	8	5	7	19	7.2	38
Corpus Christi	41	1017.3	1018.5	69	51	59.9	-5.4	82	20	32	18	0	1	52	80	1.97	.34	1.28	8	1	.0	0	12.9	ENE	37	S	24	8	3	20	7.0	49
Dallas	487	1000.7	1019.8	59	40	49.4	-8.0	86	31	19	3	0	7	35	65	.95	-1.86	.63	6	2	T	T	11.7	ESE	38	W	15	9	6	16	6.4	47
Del Rio (U)	957	------	------	70	47	58.8	-4.1	89	31+	32	1	0	1	--	--	.50	-.43	.44	5	1	.0	0	----	---	--	---	--	--	--	--	----	--
El Paso	3920	885.5	1013.2	74	45	59.7	5.2	84	22+	26	1	0	2	23	28	.21	-.07	.15	3	0	T	T	12.7	WNW	56	W	31	18	8	5	3.5	87
Fort Worth	544	998.6	1019.9	59	39	49.1	-6.6	86	31	17	3	0	9	36	68	.74	-1.93	.40	7	3	T	T	13.2	ESE	*48	W	15	9	5	17	6.5	--
Galveston (U)	7	------	------	62	52	56.8	-5.0	79	30	34	3	0	0	--	--	.93	-2.17	.73	4	--	.0	0	13.1	---	32	N	3	--	--	--	----	51
Galveston	5	1016.9	1019.6	62	51	56.3	-5.5	77	30	33	3	0	0	48	77	1.57	-1.69	.86	6	1	.0	0	9.9	E	--	---	--	7	7	17	6.8	--
Houston (U)	41	1013.5	------	66	50	58.1	-4.5	81	30	32	4	0	2	--	--	.85	-2.25	.50	7	1	.0	0	10.4	N	33	N	3	7	7	17	6.8	44
Houston	50	1016.3	1019.3	66	49	57.4	-4.2	82	30	31	4	0	2	46	71	.38	-2.40	.13	8	1	.0	0	12.4	ENE	--	---	--	6	7	18	7.0	--
Laredo	500	1001.7	1017.2	74	52	62.9	-5.5	97	31	37	18+	5	0	47	65	.36	-.54	.13	7	0	.0	0	8.2	SE	*23	SE	31+	7	7	17	6.7	--
Lubbock	3243	903.8	1017.3	61	31	45.9	-3.8	83	31+	11	3	0	17	29	62	.61	-.19	.44	8	1	.2	T	14.1	SW	*46	WNW	15	12	6	13	5.3	--
Midland	2854	915.7	1015.8	66	37	51.3	-4.4	87	22	18	3	0	8	32	58	.17	-.46	.08	6	1	T	T	11.7	ENE	*48	WSW	31	10	10	11	5.8	--
Port Arthur	16	1017.3	1019.2	65	47	55.6	-4.7	82	30	30	4	0	1	47	76	.64	-3.36	.41	9	0	.0	0	12.9	ENE	36	N	11	8	4	19	6.8	44
San Angelo	1903	949.2	1017.5	65	40	52.1	-6.1	89	31	20	3	0	6	37	63	.41	-.54	.22	5	2	.0	T	12.1	ENE	*38	NW	15	8	10	13	6.1	--
San Antonio	792	992.9	1018.3	67	46	56.1	-5.3	89	29	31	3	0	1	44	71	1.65	-.47	1.32	8	2	.0	0	10.3	NE	32	N	11	7	8	16	6.6	46
Victoria	110	1013.5	1018.5	68	48	58.0	-5.9	85	29	31	4	0	1	49	73	1.20	-1.44	.79	7	2	.0	0	12.2	SSE	‡43	S	8	7	8	16	6.9	--
Waco	500	997.6	1019.4	63	42	52.5	-5.9	86	29	24	3	0	7	40	68	.69	-2.25	.26	8	0	.0	T	11.1	N	*29	WSW	29	8	6	17	6.5	--
Wichita Falls	1020	981.7	1019.5	57	34	45.6	-7.4	89	31	13	3	0	14	33	68	1.12	-.49	.89	7	1	.7	T	10.5	N	*37	W	15	10	8	13	6.1	--
UTAH																																
Milford	5028	844.2	1017.3	58	29	43.2	4.0	74	26+	19	17+	0	24	--	--	1.26	.20	.86	7	1	3.6	3	----	---	--	---	--	11	7	13	5.6	--
Salt Lake City	4220	868.6	1018.5	54	31	42.5	1.4	78	26	13	1	0	15	30	63	2.45	.79	.69	13	2	11.4	7	8.2	S	36	NW	30	10	2	19	6.6	61
Wendover	4237	871.3	1016.3	56	34	44.9	----	74	24	14	1	0	13	--	--	.30	----	.19	4	0	T	T	----	---	--	---	--	9	7	15	5.7	-
VERMONT																																
Burlington	331	1001.4	1016.8	31	17	23.9	-5.4	57	31	-4	26	0	30	15	70	1.42	-.77	.37	12	0	8.0	5	8.4	N	27	S	17	4	5	22	7.7	58
VIRGINIA																																
Lynchburg	947	983.8	------	44	25	34.7	-11.7	78	28	11	8	0	27	--	--	3.25	-.32	1.05	9	1	24.9	12	9.1	---	34	NW	22	10	13	8	5.3	70
Norfolk	26	1017.3	1018.9	47	31	39.2	-9.9	81	28	21	11+	0	23	23	57	2.54	-.73	.94	11	0	7.9	4	12.9	N	52	E	3	11	7	13	5.7	64
Richmond	162	1012.9	1019.5	46	26	35.9	-11.6	82	29+	11	14	0	24	22	61	3.29	-.13	1.05	12	0	19.7	9	9.5	NW	32	NW	22	10	7	14	5.8	66
Roanoke	1174	975.6	1019.2	43	25	34.0	-12.3	78	28	10	8	0	27	18	57	3.96	.77	1.77	10	1	30.3	17	11.0	WNW	--	---	--	10	10	11	5.6	--
WASHINGTON																																
Olympia	190	1009.5	1016.7	53	34	43.6	-.1	69	24+	14	1	0	11	37	81	6.12	1.62	1.06	17	0	8.4	7	8.1	SW	*31	WSW	26	1	6	24	8.5	--
Seattle (U)	14	------	------	52	41	46.2	-.8	67	24	29	3	0	2	--	--	3.93	.87	1.01	18	--	5.5	4	----	---	42	SW	29+	--	--	--	----	41
Seattle	14	1015.6	1016.7	--	--	----	----	--	--	--	--	--	--	35	70	-----	----	----	--	--	----	--	8.4	S	--	---	--	--	--	--	----	--
Seattle-Tacoma	386	1002.7	1017.0	50	37	43.5	-1.0	66	24	24	3	0	5	37	81	4.08	.68	.74	19	0	5.1	4	11.2	S	*30	S	30+	2	3	26	8.4	--
Spokane	2357	947.2	1017.4	47	29	38.2	.1	71	25	2	[illegible]	0	18	27	68	2.36	1.02	.68	13	0	9.0	4	9.9	NE	37	SW	15	3	6	22	7.7	56
Stampede Pass(R)	3958	877.4	1018.1	36	26	31.0	.3	61	25+	1	2	0	24	--	--	11.15	.55	2.22	20	0	100.2	116	----	---	--	---	--	5	2	24	8.3	--
Tatoosh (R)	101	1011.9	1015.5	47	39	43.2	-1.5	57	19	27	3	0	3	38	82	8.27	.45	1.59	20	0	3.6	4	18.6	E	73	E	3	3	4	24	8.4	40
Walla Walla (U)	949	980.7	1016.9	54	37	45.7	-1.1	79	25	17	3+	0	9	--	--	1.69	.17	.44	12	1	3.7	3	5.8	Φ W	29	W	15	6	4	21	7.5	58
Yakima	1061	978.3	1018.0	55	28	41.2	-2.5	80	25	-1	4	0	21	28	62	.65	.19	.19	8	0	6.1	5	8.6	WNW	*40	WSW	15+	4	6	21	7.5	--
WEST INDIES																																
San Juan, P.R.(U)	47	------	------	83	73	77.7	2.1	87	4	69	6+	0	0	--	--	2.39	-.03	.81	11	--	.0	0	----	---	--	---	--	--	--	--	----	--
San Juan, P.R.	15	1013.7	1016.6	86	69	77.4	2.4	90	12	62	4	1	0	68	77	2.40	-.29	.72	13	1	.0	0	7.9	ENE	24	NE	22+	11	17	3	4.9	60
WEST VIRGINIA																																
Charleston	950	982.9	1019.7	42	24	32.7	-12.2	79	29	10	13+	0	25	18	56	2.05	-2.11	.48	15	1	18.3	6	8.5	WSW	30	WNW	22	3	7	21	7.7	--
Huntington (U)	565	------	------	43	24	33.8	-13.4	79	28	8	8	0	26	--	--	2.01	-2.07	.57	15	--	14.6	6	----	---	--	---	--	--	--	--	----	--
Parkersburg (U)	615	------	------	41	22	31.3	-12.3	77	29	6	8	0	27	--	--	1.57	-1.97	.75	14	1	14.9	8	6.8	---	30	NW	24	4	8	19	7.2	40

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure Ø Station	Pressure Sea level	Temperature Average maximum	Temperature Average minimum	Temperature Average	Temperature Departure from normal	Temperature Highest	Temperature Date	Temperature Lowest	Temperature Date	Temperature No. of days Max. 90° F or above	Temperature No. of days Min 32° F or below	Average dew point	Average relative humidity	Precipitation Total	Precipitation Departure from normal	Precipitation Greatest in 24 hours	Precipitation No. of days .01 inch or more	Precipitation No. of days With thunderstorms	Precipitation Snow, Sleet Total	Precipitation Snow, Sleet Max. depth on ground	Wind Average hourly speed	Wind Prevailing direction	Wind Fastest mile Speed	Wind Fastest mile Direction	Wind Fastest mile Date	No. of days (sunrise to sunset) Clear	No. of days (sunrise to sunset) Partly cloudy	No. of days (sunrise to sunset) Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F	°F.	°F.	°F		°F.				°F	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
WISCONSIN																																
Green Bay	689	997.6	1021.6	30	9	19.5	-9.0	57	29	-9	8	0	31	15	79	1.21	-0.55	0.97	9	2	2.7	3	12.3	NE	52	NW	21	8	11	12	6.0	57
La Crosse	652	995.9	1022.0	33	12	22.1	-9.5	61	29	-9	5	0	29	14	69	.80	-1.06	.34	13	1	6.9	4	9.8	NNW	*40	NNW	21	10	5	16	6.5	--
Madison	857	984.1	1021.3	30	7	18.4	-14.1	60	29	-14	6	0	29	14	80	1.93	.10	1.37	11	2	8.0	7	8.9	ENE	38	NW	21	8	6	17	6.5	55
Milwaukee	672	994.9	1021.3	30	13	21.5	-11.8	62	29	-9	1	0	29	16	76	3.80	1.61	2.57	12	2	14.3	24	14.1	WNW	50	NW	21	8	9	14	6.5	53
WYOMING																																
Casper	5319	835.1	1016.1	45	21	33.3	.9	70	27+	-19	3	0	25	20	62	.42	-.71	.28	8	1	5.1	3	12.5	SW	*37	WSW	26	8	5	18	6.9	--
Cheyenne	6131	808.7	1016.1	45	22	33.4	1.6	70	26	-11	2	0	27	20	62	.31	-.91	.08	8	0	3.7	5	16.4	WNW	47	NW	29+	8	7	16	6.5	61
Lander	5563	833.4	1016.3	46	21	33.2	1.9	68	27+	-16	2	0	25	16	51	.35	-.79	.33	3	0	7.6	7	6.6	Φ SW	43	SW	30+	12	6	13	5.4	76
Sheridan	3942	884.2	1018.4	45	21	33.3	1.7	75	26	-15	1	0	25	22	63	.24	-1.13	.06	8	0	5.4	6	9.3	WNW	56	NW	28	5	12	14	6.6	68

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

Φ Wind direction to 8 compass points only.

¢ City Office Data.

† Airport Data.

‡ Peak Gust.

HEATING DEGREE DAYS

(Base 65 F.)

MARCH 1960

State and station	Current season: This month	Current season: Period July through this month	Normals July through this month
ALABAMA			
Birmingham	637	2924	2622
Mobile	357	2011	1565
Montgomery	497	2413	2057
ALASKA			
Anchorage	1357	8827	8964
Annette	831	5469	5607
Barrow	2311	16378	15673
Barter Island	2370	16569	
Bethel	1747	11125	10587
Cold Bay	1203	7475	
Cordova	1069	7366	7601
Fairbanks	1885	12382	12336
Juneau	1019	6912	7223
King Salmon	1466	9071	
Kotzebue	1847	12991	12867
McGrath	1863	12373	12261
Nome	1678	11542	11220
St. Paul	1241	8077	8163
Yakutat	1052	7005	7361
ARIZONA			
Flagstaff	786	5926	6161
Phoenix (U)	56	1291	1430
Phoenix	56	1437	1624
Prescott	460	3899	3984
Tucson	136	1835	1692
Winslow	430	4188	4215
Yuma	13	851	937
ARKANSAS			
Ft. Smith	728	3645	3037
Little Rock	729	3396	2842
Texarkana	592	2938	2278
CALIFORNIA			
Bakersfield	185	1772	1989
Bishop	406	3577	3725
Blue Canyon	691	3976	4523
Burbank	137	1150	1549
Eureka (U)	443	3425	3543
Fresno	255	2177	2344
Los Angeles (U)	111	824	1235
Los Angeles	227	1073	1653
Mt. Shasta (R)	651	4519	4833
Oakland	282	2018	2550
Red Bluff	297	2178	2318
Sacramento (U)	246	1978	2314
Sacramento	262	2169	2490
Sandberg (R)	450	3338	3491
San Diego	151	872	1283
San Francisco (U)	282	1894	2362
San Francisco	308	2018	2666
San Jose (U)	212	1664	1998
Santa Maria	308	1978	2277
COLORADO			
Alamosa	968	7598	7317
Colorado Springs	904	5912	5317
Denver	827	5543	5256
Grand Junction	697	5238	5226
Pueblo	817	5578	5023
CONNECTICUT			
Bridgeport	1016	4747	5048
Hartford	1129	5545	5379
New Haven	1027	4902	5146
DELAWARE			
Wilmington	994	4492	4398
DIST. OF COLUMBIA			
Washington (U)	897	4002	3864
Washington	905	3967	3923
FLORIDA			
Apalachicola (U)	305	1531	1274
Daytona Beach	240	880	857
Fort Myers	105	482	405
Jacksonville	324	1412	1220
Key West	27	115	77
Miami	59	256	178
Miami Beach	34	150	123
Orlando	175	744	650
Pensacola (U)	319	1751	1390
Tallahassee	333	1697	1481
Tampa	147	684	674
West Palm Beach	89	350	248
GEORGIA			
Athens	746	3242	2657
Atlanta	713	3060	2673
Augusta	630	2710	2076
Columbus	568	2559	2299
Macon	576	2484	1987
Rome	769	3437	2952
Savannah	535	2203	1667
IDAHO			
Boise	681	6005	5096
Lewiston	649	5123	4785
Pocatello	841	6384	5962
ILLINOIS			
Cairo (U)	911	3899	3527
Chicago	1192	5766	5516
Moline	1392	6334	5667
Peoria	1308	6034	5419
ILLINOIS (Cont'd.)			
Springfield	1257	5584	5086
INDIANA			
Evansville	1074	4695	4013
Ft. Wayne	1253	5817	5492
Indianapolis	1198	5480	4973
South Bend	1272	5984	5683
IOWA			
Burlington	1287	6109	5463
Des Moines	1344	6613	5762
Dubuque	1389	6983	6385
Sioux City	1454	7095	6256
KANSAS			
Concordia (U)	1142	5706	4816
Dodge City	953	5272	4561
Goodland	1005	6065	5534
Topeka	1145	5510	4731
Wichita	961	4895	4183
KENTUCKY			
Lexington	1089	4724	4456
Louisville	1002	4394	4055
LOUISIANA			
Baton Rouge	327	1931	1547
Lake Charles	333	1950	1503
New Orleans (U)	264	1538	1156
New Orleans	292	1703	1286
Shreveport	511	2683	2056
MAINE			
Caribou	1339	7761	8551
Greenville (U)	1356	7602	
Portland	1159	6090	6477
MARYLAND			
Baltimore (U)	900	3982	3804
Baltimore	970	4403	4289
Frederick	1045	4837	4380
MASSACHUSETTS			
Blue Hill Obs. (R)	1108	5486	
Boston	992	4795	4979
Nantucket	1022	4680	4927
Pittsfield	1274	6368	6563
MICHIGAN			
Alpena	1471	7253	6739
Detroit	1196	5665	5535
Detroit(Willow Run)	1177	5736	5618
Escanaba (U)	1385	7120	7216
Grand Rapids	1268	6143	6089
Lansing	1327	6348	
Marquette (U)	1353	7163	7074
Muskegon	1255	6124	5981
S. Ste. Marie	1442	7781	7906
MINNESOTA			
Duluth	1475	8514	8439
Internat. Falls	1551	9179	9158
Minneapolis	1395	7275	6944
Rochester	1422	7327	7105
St. Cloud	1463	8053	7793
MISSISSIPPI			
Jackson	550	2757	2121
Meridian	534	2748	2239
Vicksburg (U)	532	2625	1929
MISSOURI			
Columbia	1118	5226	4638
Kansas City	1067	5037	4477
St. Joseph	1216	5705	4869
St. Louis (U)	1035	4699	4098
St. Louis	1072	4884	4290
Springfield	1002	4783	4264
MONTANA			
Billings	925	6154	6119
Glasgow	1303	8098	7668
Great Falls	1041	6498	6409
Havre (U)	1139	7195	7178
Helena	996	7154	7000
Kalispell	1164	7917	6810
Miles City	1109	7074	6889
Missoula	988	7075	6723
NEBRASKA			
Grand Island	1241	6592	5654
Lincoln (U)	1237	6200	5284
Norfolk	1397	7159	6253
North Platte	1143	6686	5755
Omaha	1290	6513	5564
Scottsbluff	1958	7233	5888
Valentine	1243	7107	6161
NEVADA			
Elko	769	6318	6162
Ely	792	6508	6186
Las Vegas	177	2381	2333
Reno	638	5177	5034
Tonopah	544	4580	4946
Winnemucca	694	5781	5413
NEW HAMPSHIRE			
Concord	1151	6044	6554
NEW HAMPSHIRE (Cont'd.)			
Mt. Washington Obs.	1848	10521	
NEW JERSEY			
Atlantic City (U)	988	4206	4060
Newark	959	4408	4643
Trenton (U)	983	4480	4495
NEW MEXICO			
Albuquerque	462	3899	4030
Clayton	737	4986	4510
Roswell	426	3771	3211
NEW YORK			
Albany	1184	6001	6069
Binghamton	1305	6152	6459
Buffalo	1258	5723	5815
New York (U)	971	4439	4423
New York	959	4322	4391
Rochester	1313	6073	5905
Schenectady	1108	5654	6180
Syracuse	1255	5935	5666
NORTH CAROLINA			
Asheville (U)	969	4150	3677
Cape Hatteras (R)	694	2533	2196
Charlotte	776	3321	3004
Greensboro	919	3959	3519
Raleigh	844	3621	3126
Wilmington	657	2689	2212
Winston-Salem	879	3813	3440
NORTH DAKOTA			
Bismarck	1390	8010	7905
Devils Lake (U)	1588	9120	8659
Fargo	1526	8360	8148
Grand Forks	1574	8892	
Pembina	1548	8893	
Williston (U)	1342	8078	7907
OHIO			
Akron	1261	5707	5381
Cincinnati Obs.	1056	4670	4110
Cincinnati	1090	4912	4631
Cleveland	1262	5411	5206
Columbus	1128	5155	4960
Dayton	1180	5369	4944
Sandusky (U)	1183	5435	5088
Toledo	1211	5852	5534
Youngstown	1253	5759	5344
OKLAHOMA			
Oklahoma City	777	4048	3422
Tulsa	818	3956	3367
OREGON			
Astoria	615	4165	3957
Burns (U)	793	6091	5858
Eugene	556	3927	3961
Meacham	876	6474	6317
Medford	482	3926	3890
Pendleton	643	4918	4570
Portland (U)	554	3611	3527
Portland	612	4141	3901
Roseburg	475	3709	
Salem	634	4108	3826
Sexton Summit (R)	743	5116	4876
PENNSYLVANIA			
Allentown	1089	5066	5196
Harrisburg	1017	4780	4693
Philadelphia (U)	922	4107	4061
Philadelphia	997	4475	4360
Pittsburgh (U)	922	4574	4496
Pittsburgh	1203	5454	5188
Reading (U)	985	4545	4515
Scranton	1225	5650	5300
Williamsport	1122	5295	5215
RHODE ISLAND			
Block Island	1001	4605	4809
Providence	1034	5048	5239
SOUTH CAROLINA			
Charleston (U)	554	2146	1726
Charleston	582	2321	1910
Columbia	655	2814	2352
Florence	671	2742	2424
Greenville	763	3325	2867
Spartanburg	768	3345	2866
SOUTH DAKOTA			
Huron	1546	7869	6985
Pierre	1394	7472	
Rapid City	1140	6686	6415
Sioux Falls	1462	7615	6934
TENNESSEE			
Bristol	968	4203	3779
Chattanooga	801	3594	3160
Knoxville	869	3761	3344
Memphis	763	3427	2974
Nashville	886	3931	3284
TEXAS			
Abilene	482	2927	2544
Amarillo	696	4480	3948
Austin	350	2116	1663
Brownsville	104	715	617
TEXAS (Cont'd.)			
Corpus Christi	189	1222	1005
Dallas	488	2709	2197
Del Rio	233	1750	
El Paso	176	2446	2531
Ft. Worth	499	2769	2266
Galveston (U)	264	1559	1181
Galveston	276	1645	1205
Houston (U)	248	1649	1249
Houston	260	1739	1352
Laredo	170	1112	[illegible]
Lubbock	589	3826	3350
Midland	426	2944	
Port Arthur	304	1892	1478
San Angelo	406	2664	2045
San Antonio	291	1928	1545
Victoria	244	1561	1112
Waco	402	2422	1959
Wichita Falls	606	3318	2869
UTAH			
Milford	669	5633	5583
Salt Lake City	692	5503	5099
VERMONT			
Burlington	1267	6745	6805
VIRGINIA			
Lynchburg	933	4165	3777
Norfolk	796	3376	3130
Richmond	894	3938	3618
Roanoke	955	4205	3782
WASHINGTON			
Olympia	652	4598	4482
Seattle (U)	575	3618	3689
Seattle-Tacoma	660	4293	4336
Spokane	823	6328	5815
Stampede Pass (R)	1049	7609	7238
Tatoosh Island (R)	666	4395	4432
Walla Walla (U)	592	4631	4301
Yakima	730	5535	5179
WEST VIRGINIA			
Charleston	994	4418	3989
Huntington (U)	962	4244	3732
Parkersburg (U)	1038	4663	4271
WISCONSIN			
Green Bay	1405	7210	7109
La Crosse	1322	6865	6774
Madison	1140	6984	6484
Milwaukee	1342	6518	6124
WYOMING			
Casper	978	6731	6451
Cheyenne	975	6431	6210
Lander	982	7050	7057
Sheridan	977	6822	6710

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

MARCH 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alabama	1	1	0	0	5	0	0	3	0	0	0	4	0	0	1	0	0					0	0	6	7				
California										0	0	3	0	0	0	2	0												
Connecticut												3						8	M	4									
Florida	6	5	0	6	5	0	0	5	5	0	1	5	0	1	0	0	0									0	0	7	7
Georgia	1	1	0	0	3	0	0	3	3	0	0	4	0					3		6		3		7					
Idaho																										[illegible]	1		
Illinois	2	1	0	0	5	0	0	U	0	0	0	U	0	1	0	U	0	0	0	U	0								
Indiana	1	1	0	0	3													1	0	5	0								
Iowa	1	1	0	0	3		5	3										0	0	4									
Kansas	1	1	0	0	0									0	0	3	0	13	51	0	0								
Kentucky												4								5									
Louisiana	1	1	0	0	3																	0	0	°5	C				
Maine																		0	0	5	0	0	0	3	0				
Maryland																				5									
Massachusetts										0	0	5	0					0	0	5	0	0	0	3	0				
Michigan												4																	
Mississippi	1	1	0	0	3																								
Missouri	3	1		1	4															6									
Nebraska										0	0	4	0																
New Hampshire																		0	0	5	0								
New Jersey										0	0	3	0					9	*60	4	0								
New York												4						31	U	6						2		5	
North Carolina	1	1	0	0	4					0	0	4	0					1	800	6	0	0	100	4	0				
Oklahoma	5	2	0	0	4	0	0	5	0	0	0	4	0	0	1	2	0												
Oregon	1	1	0	0	3					0	0	4	1	0	0	3	0	2	M	4	2					0	0	3	2
Pennsylvania																		6	5	4									
Rhode Island																		5	M	4									
South Carolina	2	1	0	0	5	0	0	0	2	0	0	2	0					0	U	5	0	0	U	4	0				
Tennessee	1	1	0	1	4					0	0	5	0					0	2	U	0	0	0	7	0				
Texas																						0	0	4	0				
Utah																		0	1										
Vermont																		0	0	4	0								
Virginia												4						13	15										
Washington												3								4				3					
West Virginia																		0	F	4	0								
Wisconsin																										0	0	6	0

M Many.
U Undetermined.
C Crop Damage.
° Includes Crop Damage.
* Approximate.
F Few
‡ Includes heavy sleet storm.
# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS
MARCH 1960

Severe flooding occurred in the Missouri and Upper Mississippi Basins during March. The flooding on the Big Sioux River at Akron, Iowa, was the greatest since the turn of the century. A few records were broken, but in general, stages were slightly under those of record. The combined Missouri-Mississippi flows at St. Louis, Mo., was about 750,000 c.f.s. compared to the recent-year record of 840,000 c.f.s. in 1944. Approximately 28,000 persons were evacuated and over one million acres flooded. Traffic was stopped on at least 75 major highways.

One of the worst floods since September 1933 occurred on the Hillsborough River in North Tampa, Fla., around the middle of the month. About 8,000 persons were evacuated.

Some record flooding occurred in St. Lawrence drainage in western New York. The third highest flood of record occurred on French Creek in Pennsylvania. Floods reported elsewhere were light to moderate in severity.

ST. LAWRENCE DRAINAGE

Lake Michigan.--Major flooding occurred on streams near and at Milwaukee, Wis., towards the end of the month due to snowmelt and excessive rainfall on the 29th and 30th. There was a record snowfall of 91.3 inches at Milwaukee from November 1, 1959, through March 31, 1960. The flood this year was much worse than last year along the Milwaukee River, particularly in the Milwaukee area. Heavy damage resulted from the flooding.

Lake Huron.--Moderate flooding occurred on streams in the Lake Huron Drainage in Michigan from snowmelt and heavy rainfall during the latter part of March. A number of basements were flooded in residential areas along the Tittabawassee at Midland, Mich., the Shiawassee at Owosso, Mich., and the Cass at Vassar, Mich. The Dow Chemical Saran Wrap plant was closed at Midland, Mich., because roads leading to the plant were flooded. There was some damage to golf courses on the Flint River at Flint, Mich. Many homes were evacuated in Flint and a few streets were closed.

Lake Erie.--Minor flooding occurred in the Maumee River Basin in Indiana and Ohio towards the end of the month due to rapid snowmelt. There was little or no contribution from rainfall to this spring freshet.

Small creeks in western New York overflowed on the 29th and 30th from snowmelt. The most serious flooding developed on Tonawanda Creek which crested at an alltime high stage of 16.95 ft. on April 1 at Rapids, N. Y. Several roads were blocked for several days. Scores of homes in Newstead, Clarence, and North Amherst were cut off or in some cases flooded with water.

Lake Ontario.--Record to near record stages occurred in the lower tributaries of the Genesee River Basin in western New York towards the end of the month. The previous record stages on Oatka and Black Creeks in March 1950 were exceeded slightly. This flooding was due mostly to snowmelt.

ATLANTIC SLOPE DRAINAGE

Heavy rain on the 30th and 31st caused the Pemigewasset to rise to within 0.4 foot of flood stage at Woodstock, N. H., on the 31st.

Flooding developed on the Hoosic and Schoharie Rivers in New York on the 31st due to moderate rain (3/4 to 1-1/2 inches) on top of a deep water-laden snow cover. Much of the snow south of the Mohawk Valley ran off with the rain. The Hudson River exceeded flood stage by 0.9 foot on April 1.

Warm temperatures, which began on the 27th and continued through March, melted a snow mantle which ranged from a trace in the southern portion of the Susquehanna Basin to as much as 43 inches in the higher elevations of the headwaters. The water content of the snow on the ground ranged from 1.5 to 2.5 inches in wooded areas to 6 inches in the higher elevations. Maximum temperatures were in the middle and high 50's for several days prior to the 30th. Streams were running full with maximum runoff occurring on the 30th and 31st from snowmelt and precipitation. By the morning of the 31st, 90 percent of the snow cover had been melted. Additional rain and snowmelt produced crests that were the highest since the flood of May 1946 on the Susquehanna River from the New York border to Danville, Pa., and the highest since the flood of November 1950 below Danville. There was widespread minor damage, with a few areas of moderate to locally severe damage.

The light flooding in the North and South Branches of the Potomac in Maryland and West Virginia and along the main stem of the Potomac near Washington, D. C., towards the end of the month was due to snowmelt and light to moderate rain. Temperatures reached near 80° on the 28th and 29th in many parts of the basin causing rapid depletion of the moderately heavy snow cover. The water content of the snow pack on the 28th averaged about 3 inches in the upper Potomac. No damages were reported.

Rapidly melting snow at the end of the month brought rapid rises over the James River Basin in Virginia, with flooding along the main stem below Scottsville, Va., on the 30th and 31st. Crests occurred on April 1 and 2 and were 2 to 6 feet above flood stage. Although crests were the highest on record since August 1955, no damages have been reported and flooding was not considered serious.

Rain, snow, and sleet on the 16th caused sufficient runoff to cause minor flooding on the Neuse and Cape Fear Rivers in eastern North Carolina beginning on the 17th and 18th respectively. Serious flooding was prevented by the freezing weather which followed for 10 days after the flood-producing rains of the 16th. When the thaw finally came near the end of the month, most of the snow was already gone.

The Waccamaw River at Conway, S. C., flooded slightly on the 4th and 5th and remained high all month. The North Fork of the Edisto River at Orangeburg, S. C., flooded slightly several times and remained close to flood the rest of March. The main stem of the Edisto was in moderate to shallow flood all month at Givhans State Park. Flooding has been almost continuous in this area since October 1, 1959. Heavy rains of 2 to 3 inches on the 29th to the 30th caused light flooding on the Yadkin River at Yadkin College, N. C., and heavy flooding on the Pee Dee River at Cheraw, S. C. Most of the snow had melted before the heavy rains began. The water content of the snow cover had reached over 7 inches at Blowing Rock, N. C., on the 17th. Light flooding occurred on the Rocky River, an upper tributary of the Pee Dee. Construction work along the Pee Dee River was delayed. Inconvenience continued along the main Edisto where many camp sites have been inaccessible since hurricane Gracie in late September.

All streams in the Santee System in South Carolina remained at relatively high levels during the month. Heavy rain (over 3 inches) on the 29th and 30th caused sharp rises on the Saluda, Broad, and Catawba Rivers to above flood stage on the 30th and 31st. The snow had generally disappeared prior to the rain, but the snow that remained in the headwaters melted rapidly with the onset of the rain. Losses to pasturage and the lumbering industry were heavy especially in the Columbia, Camden, and Rimini, S. C., areas. Losses otherwise were light.

The Savannah River in Georgia was in flood all but 2 days of the month at Milhaven. At Clyo the river has been above flood stage since January 9. The Ogeechee River has been in flood at Dover, Ga., from February 1 through March 23. The Altamaha River has been in flood at Charlotte, Ga., from February 8 to March 15, and the Satilla at Atkinson, Ga., from February 22 through March 10. The rainfall during March was concentrated into three well marked periods: 1-4; 9-18; and 25-31. The rainfall during the latter period was excessive on the 29th and 30th and averaged 3 inches in the Savannah Basin. Little if any damage resulted from the flooding.

EAST GULF OF MEXICO DRAINAGE

Heavy rains from the 15th to the 18th caused the worst flood on the Hillsborough River in North Tampa, Fla., since September 1933. The storm totals ranged from 7.3 inches in downtown Tampa, 9.25 inches at the airport, and 17 inches in north and northeast Tampa up to a maximum of 25 inches in parts of Pasco County. About 8,000 persons in Tampa were evacuated from their homes. Water in some homes reached to the ceiling. Many state and federal highways in and to the north of Tampa were closed for many days following the flooding.

The Apalachicola River at Blountstown, Fla., was in flood from February 2 through March 27. It rose again to above flood stage on the 31st from excessive rains on the 29th and 30th. No damages resulted as only wooded areas and swampland were overflowed.

Heavy rains on the 2d and 3d, following rather heavy rains in late February, caused flooding at most stations on both the Warrior and Tombigbee Rivers. Additional heavy rains on the 9th, 10th, and 11th followed by additional rainfall on the 15th and 16th caused additional flooding on the Tombigbee at Fulton and Macon, Miss. Considerable damage resulted from the flooding.

Excessive rainfall over the upper reaches of the Pearl River on the 1st and 2d produced heavy flooding of low pastures and adjacent timberlands in Mississippi and Louisiana to the coast. Lesser rains during the remainder of the month contributed to local crests as the flood moved downstream.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--The spring snowmelt began on the 27th and 28th south of a line from Beardsley, Minn., through Minneapolis southeastward through Eau Claire, Wisconsin Rapids to Manitowoc, Wis. There was little chance for the ice to weaken and deteriorate during March as the month was cold. It was the second coldest March of record and in a few areas the coldest on record. At Minneapolis-St. Paul, Minn., the daily normal temperature was not equalled or exceeded for 39 consecutive days, February 17 to March 26. The daily maximum was less than 32°F. from February 17 through March 15. When the ice-breakup began, the ice let loose all at once and formed ice jams along the tributaries of the Minnesota River upstream from Mankato, Minn. The ice jams together with the rain of March 29 and 30 produced minor flooding of bottom lands and pastureland along the Upper Minnesota Valley.

Severe floods developed during the latter part of March in tributary streams in Iowa, Illinois, and Wisconsin and along the lower Mississippi River from rapid snowmelt. Conditions were set for this spring freshet in January when heavy rains ranging up to more than 4 inches fell on already well-saturated soils. The rains were followed by a rapid turn to colder, and frequent periods of heavy snows that by mid-March measured better than 20 inches in some localities with a water equivalent ranging from 2 to 5.5 inches. Melting began on the 26th and most of the snow was gone from the open areas by the 29th. Flooding was extensive and covered the last 3 days of March and early April. The crest of 17.1 feet at Boone, Iowa, on the 31st had been exceeded on five other occasions in late spring and early summer. On the North Raccoon River the crest of 19.3 feet at Jefferson, Iowa, on March 31 had been exceeded only on two other occasions. Downstream crests occurred in April. On the Iowa River at Marshalltown, Iowa, the crest of 17.5 feet on the 31st had been exceeded only one other time, a 17.7-foot crest in 1918. The crest of 22.0 feet at Ackworth, Iowa, on the South River on the 29th was the fourth ranking flood of record at Indianola, Iowa. On the Middle River, the crest of 20.5 feet on the 30th was the third ranking flood of record. On the Cedar River, at Waterloo, Iowa, the crest of 18.1 feet on the 31st was the sixth highest flood of record. Damage was extensive on the Des Moines River from Boone to below Ottumwa, Iowa; on the Iowa River from Marshalltown, Iowa, to Coraville Reservoir, and in some locations below Iowa City; on the Cedar River from Waterloo downstream; and on the Raccoon River from Jefferson, Iowa, to the mouth. No deaths were attributed to the flood, although more than 1,000 persons were evacuated from their homes in the areas of severe flooding.

Flooding began along the main stem of the Mississippi at Keithsburg, Ill., on the 30th. Record crests were reached along the main stem in the Quincy, Ill., Hannibal, Mo., areas early in April.

Missouri Basin.--The Milk River reached bankfull stage from Hinsdale to Glasgow, Mont., from the 22d to the 25th due to snowmelt. Flooding was limited to lowlands near the river and tributary creeks. A number of homes in the Glasgow, Mont., area outside the dike were isolated, but none were actually flooded. The Austin Packing Plant along the river west of Glasgow, Mont., was cut off from town by water, but there was negligible damage to the plant. Some damage resulted to a dike around the city sewage lagoon under construction.

Unusually warm weather during the third week in March caused a rapid breakup of the thick ice on the lower Yellowstone River and its small tributaries. There was a considerable amount of snow on the ground in some areas of southeastern Montana when the warm weather began. Some of the maximum temperatures were the highest ever recorded for so early in the spring. Ice jams and flash floods developed at a number of places in eastern Montana between the 20th and 25th. The greatest damage along the main stem of the Yellowstone occurred from about 5 miles west of Terry, Mont., downstream to Sidney, Mont., with the most damage in the vicinity of Glendive, Mont. Another major area of flood damage occurred in the vicinity of Broadus, Mont.

The Heart River overflowed in the Bismarck-Mandan, N. Dak., area from the 26th to the 29th. This flooding was due to the ice-breakup which formed ice jams as the ice moved downstream just above the confluence of the Heart and the Missouri Rivers. Maximum temperatures reached into the 70's during the period from the 21st to the 26th.

Floods developed in the Missouri Basin below the North Dakota-South Dakota State line during the last 10 days of March as mild maritime air from the Pacific moved over the northern Rockies and slowly replaced the cold March weather over the northern Great Plains. In South Dakota, from the Black Hills to the Missouri River, the snow cover was generally light throughout the winter; never amounting to more than 3 to 6 inches except a little more accumulation in the higher elevations of the Black Hills. Floods in western South Dakota were mostly localized and the result of ice jamming between the 22d and 26th. Ice-jam floods occurred near the mouths of all the western tributaries of the Missouri; namely, the Grand, the Moreau, the Cheyenne, the Bad, and the White Rivers; as the Missouri River ice was thick and did not breakup completely until the last 4 days of March. A similar adverse ice breakup occurred on the lower end of the Niobara River in the northern edge of Nebraska. Snowmelt floods developed from the Missouri River eastward in South Dakota to the southwestern counties of Minnesota and over northwest Iowa from the 26th to the end of the month. The floods on the Big Sioux and James Rivers continued until about the middle of April. The snowfall during the first half of March was largely responsible for the magnitude of these floods. Rains early in April prolonged the floods and created secondary crests. Ten to 20 inches of new snow fell during the first half of March, east of the Missouri River, on the existing snow cover of 4 to 6 inches. The flood during the latter part of March was due almost entirely to rapidly melting snow and was one of the largest snowmelt floods of record. The floods of 1892, 1926, 1934, and 1953 were higher but were due to rainfall. It is estimated that 12,000 to 15,000 acres of farmland was flooded above Sioux City, Iowa, along the Floyd and its principal tributary, the West Branch. Flood damage on river bottom farms was at a minimum, since the flood was ahead of the farming season. Principal damage was to road grades, fences, stored hay, and grain. In Sioux City, about 250 families were evacuated from lowlands near the levees, and about 150 business places either moved office equipment and other property to the second floor or out to higher areas. The flood waters came to within 2 feet of the top of the levees in the northeast part of town. The greatest flood damage was in Leeds, a suburb of northeastern Sioux City. This was indirect flood damage resulting from a combination of sewer backup, drainage from the hills, and water welling up from low ground outside of the levees.

Rapid snowmelt, and in some cases ice jams, produced local flooding in the lower reaches of the Loup River Basin, the Platte River, and Salt Creek Basin in Nebraska and the lower reaches of the Little Sioux River Basin in northwestern Iowa. Flooding on the lower reaches of the Platte River was further aggravated by the high flow from the Elkhorn River, causing flooding in the town of Waterloo, Nebr. High flow from Salt Creek caused lowland flooding in the Ashland, Nebr., area on the Platte River. Heavy damage resulted from the flooding in Nebraska. The greatest damage was to roads and bridges. Over 1,250 homes were affected and numerous farm buildings. Many homes were badly damaged. More than 8,000 persons were directly affected by the flooding in Nebraska. Damage in the upper reaches of the Elkhorn, above Neligh, was principally to highway fills and bridges, and to fences. Heavy damage occurred to the Norfolk City Park, Nebr., due to an ice jam. Recurring ice jams from Wisner, Nebr., to the mouth of the Elkhorn produced heavy flooding with serious damage to bridges, highways, and railroad properties. Many residences were flooded.

Flooding was severe on the Big and Little Blue Rivers in Nebraska and Kansas, with crests ranging from the third to the fifth highest of record. Stages were high on the lower Saline, where flood waters covered the streets of Tescott, Kans. Heavy flooding in Frankfort, Kans., covered 40 city blocks from overflows of the Black Vermillion and tributary creeks. Considerable flooding took place on the upper Republican tributaries and on the main stem in the Orleans, Nebr., area where ice jams contributed to the flooding. Overflows covered large lowland areas along the Saline as well as below the control reservoirs on the lower Solomon and lower Republican Rivers. Flooding along the Smoky Hill and Kansas Rivers was mostly light. Moderate overflows occurred along the Marais des Cygne River in Kansas. This widespread flooding in Nebraska and Kansas was due to snowmelt. The snow cover immediately before the thaw began ranged from 8 to 15 inches with a water content of 2.5 to 5 inches. Moderate damages resulted from the flooding with the heaviest losses confined to the Big Blue River Basin.

The main stem of the Missouri was rising rapidly towards the end of the month and had passed flood stage at several points by the 29th. The reach at and below Nebraska City, Nebr., was in flood by the 30th.

Ohio Basin.--The exceptionally heavy snow cover over the upper Ohio Basin resulted in unprecedented snow runoff during the period March 28 to April 1. Flood stages were exceeded at many localities along the Allegheny, Monongahela, and Ohio Rivers and their tributaries.

The flooding on French Creek at Meadville, Pa., from the 30th to April 2 was the third highest flood of record and was 1.7 feet lower than the maximum flood of record which occurred in January 1959. Downstream at Cochranton, Pa., flooding was severe and reports from local interests indicate that the crest of this flood was higher than the severe ice-gorge flood of January 1959. Flooding along the Allegheny in New York and Pennsylvania was comparatively light. Minor damages occurred in low-lying areas at Salamanca, N. Y. At Warren, Pa., the airport was flooded and dwellings in the west end of town were also affected. The ice did not have any serious effect during this flood as compared to ice conditions in January 1959. At

Freeport, Pa., about 75 homes and 5 business establishments were affected. Flood stages along the Monongahela River were exceeded by 1 to 2 feet. River navigation was suspended for a short time due to water overflowing the lock walls at the various locks and dams. Damages were minor over the entire Monongahela Basin. The high water on the Shenango River at Sharon, Pa., resulted in only minor damages to the city. At Farrell, Pa., the operations of the Sharon Steel Company plant was curtailed due to the high water. Downstream in Wheatland, Pa., many homes were affected by the highwater.

The floods in the Wabash Basin in Indiana was due to the rapid melting of the heavy snow cover during the last 5 days of the month. This thaw was accompanied by an additional 0.50 to 0.75 inch of precipitation on the 25th and 26th. As the month ended the flood crest was moving downstream below Wabash, Ind. No evacuations or significant damage was reported.

Minor flooding, with little or no damage, occurred on the Skillet Fork and Saline Rivers in Illinois from snowmelt (7 to 10 inch snow cover). Moderate rains on the 30th and 31st caused a second rise with minor overflow.

Flood stage was exceeded by nearly 5.5 feet on the South Chickamauga Creek near Chickamauga, Tenn., between the 2d and 5th. The Tennessee River exceeded flood stage at Whitesburg, Tenn., between the 3d and 6th by nearly 2 feet.

The main stem of the Ohio exceeded flood stage in the reach between Pittsburgh, Pa., and McMechen, W. Va., on the 31st. At Pittsburgh, Pa., the Ohio reached a crest of 27.7 feet, 2.7 feet above flood stage on April 1. Water entered basements of some downtown business establishments, covered the Baltimore and Ohio Railroad yard on the northside with 4 to 5 feet of water, and entered basements of dwellings and business concerns along the right bank of the Allegheny River on the northside. Damages were held to a minimum in Pittsburgh due to action taken by local interests. As the flood moved down the Ohio River, flood stages were exceeded from 2 to 7.5 feet in the reach from Pittsburgh, Pa., to Duffy, Ohio. At Wheeling, W. Va., flood waters affected residents living on Wheeling Island and caused some flooding to the Wheeling Downs Race Track.

Arkansas Basin.--The minor flooding in the Arkansas Basin towards the end of the month was due to the melting of the heavy snow cover over the upper Arkansas and Neosho Basins. The snow cover melted gradually as the weather alternated from warm to cold. This was the greatest amount of flow due solely to snowmelt ever recorded in this area.

Lower Mississippi Basin.--Late on the 2d, the Big Black River overflowed its banks along its entire length as a result of heavy rains which totaled between 3 and 4 inches in many areas, and which fell in a period of about 24 hours. The river overflowed to a depth of more than 8 feet in the Bovina, Miss., area and remained above flood level between 2 and 3 weeks. Principal damage was to farmlands and pastures.

Elsewhere in the lower Mississippi Basin, the Tallahatchie and Yazoo Rivers reached bankfull or slightly higher, with minor damages resulting.

WEST GULF OF MEXICO DRAINAGE

Two periods of rainfall totaling between 1 and 2 inches (on the 1st and 2d, and again on the 14th) caused the Calcasieu River in Louisiana to overflow slightly on two occasions.

The Sabine River, which was above flood level at the end of February at Deweyville, Tex., continued at or near flood stage for the first 22 days of the month. Rains generally from 1 to 1.5 inches, but locally in excess of 2.5 inches, from the 1st to the 3d, caused some minor overflow at some upstream points during the first decade of the month. No damages resulted from these overflows.

A strong rise occurred on the lower Trinity River following rains of 1 to 1.5 inches on the 1st and 2d. A crest 2 feet below flood stage passed Liberty, Tex., on the 6th.

PACIFIC SLOPE DRAINAGE

Sacramento Basin.--A series of warm-type storms moved across northern California during the first half of the month. Rainfall during this period was about 80 percent of the monthly normal from about Sacramento, Calif., northward. As a result, some overflow into the Sacramento bypass systems occurred at three of the four fixed sill weirs from the 8th through the 11th.

Columbia Basin.--Between the 4th and 9th rapid melting of snow augmented by rain produced local flooding in several areas of southern Idaho. Farms and other rural property near Blackfort and near Rupert were flooded when drainage ditches were unable to contain the rapid accumulation of water. Streets in Shelley and Pocatello were inundated and water reached a few residence basements. Many county roads in Bingham and Minidoka Counties were closed for 2 or 3 days and suffered some damage from erosion. An ice jam caused local flooding along the Blackfoot River southwest of Blackfoot. Some road damage occurred in Owyhee County when Reynolds and Squaw Creeks overflowed.

Many stations in the Columbia Basin in northern Oregon recorded precipitation of more than 200 percent of normal for March, and one station, Bend, Oreg., received nearly 300 percent of normal. This abnormally high March precipitation occurred in two periods, from the 2d to the 16th and from the 26th to the 31st. Even so, only minor overflow resulted along main rivers when the Santiam River at Jefferson, Oreg., and the Pudding River at Aurora, Oreg., exceeded flood stage slightly. No damage occurred.

FLOOD STAGE DATA

(All dates in March unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
ST. LAWRENCE DRAINAGE	Ft.			Ft.	
Lake Michigan					
Red Cedar Williamston, Mich.	7	28	Apr. 2	9.4	31
East Lansing, Mich.	7	29	Apr. 3	9.2	31
Grand: Lansing, Mich.	11	30	Apr. 2	12.1	Apr. 1
Ionia, Mich.	21	31		23.4	Apr. 1
Lowell, Mich.	15	31		17.4	Apr. 2
Grand Rapids, Mich.	18			19.2	Apr. 3
Lake Huron					
Flint: Flint, Mich.	11	30	Apr. 4	13.2	Apr. 1
Chippewa: Mt. Pleasant, Mich.	13	30	Apr. 1	13.3	31
Shiawassee: Owosso, Mich.	7	28	Apr. 6	8.4	Apr. 1
Tittabawassee: Midland, Mich.	18	31	Apr. 3	20.7	Apr. 1
Saginaw: Saginaw, Mich.	19	Apr. 1	Apr. 7	20.5	Apr. 3
Lake Erie					
St. Marys: Decatur, Ind.	13	29	31	13.6	29
St. Joseph: Montpelier, Ohio	10	30	Apr. 2	11.7	31
Maumee Fort Wayne, Ind.	15	30	30	15.0	30
Lake Ontario					
Canaseraga Creek: Groveland, N.Y.	11	29	Apr. 1	13.4	30-31
Honeoye Creek: Honeoye Falls, N.Y.	5	30	31	6.1	30
Oatka Creek: Garbutt, N. Y.	5	30	Apr. 5	8.55	31
Black Creek: Churchville, N. Y.	5	30	Apr. 5	9.4	31
Genesee: Scio, N. Y.	8	29	Apr. 1	9.4	31
Rochester, N. Y.	13	31	Apr. 2	14.6	31
ATLANTIC SLOPE DRAINAGE					
Hoosic: Eagle Bridge, N. Y.	10	31	Apr. 1	11.45	31
Schoharie: Middleburg, N. Y.	12	31	Apr. 1	13.2	31
Esperance, N. Y.	15	31	Apr. 1	17.45	31
Hudson: Troy, N. Y.	15	Apr. 1	Apr. 1	15.9	Apr. 1
Chenango: Sherburne, N. Y.	8	31	Apr. 5	9.4	31
Greene, N. Y.	13	31	Apr. 5	15.0	Apr. 1
Whitney Point, N. Y.	12	31	Apr. 10	15.2	Apr. 1
Chenango Forks, N. Y.	10	31	Apr. 2	12.0	Apr. 1
Tioga: Lindley, N. Y.	17	31	31	17.3	31
Chemung: Elmira, N. Y.	10	29	Apr. 1	14.5	Apr. 1
Chemung, N. Y.	12	29 Apr. 4	Apr. 2 Apr. 5	19.1 13.4	31 Apr. 4
West Branch Susquehanna: Williamsport, Pa.	20	31	Apr. 2	20.9	Apr. 1
Susquehanna: Unadilla, N. Y.	11	Apr. 1	Apr. 7	14.05	Apr. 5
Bainbridge, N. Y.	13	31	Apr. 7	17.7 20.6	31 Apr. 5
Conklin, N. Y.	11	31	Apr. 8	15.3 17.0	Apr. 1 Apr. 6
Binghamton, N. Y.	14	31	Apr. 6	16.6 16.3	Apr. 1 Apr. 5
Vestal, N. Y.	18	31	Apr. 7	23.4 23.2	Apr. 1 Apr. 5
Towanda, Pa.	16	30	Apr. 6	22.9 18.0	Apr. 1 Apr. 5
Wilkes-Barre, Pa.	22	31	Apr. 7	29.6 25.2	Apr. 1 Apr. 5
Danville, Pa.	20	31	Apr. 7	23.9 22.1	Apr. 2 Apr. 5
Sunbury, Pa.	16	31	Apr. 3	18.6	Apr. 2
Harrisburg, Pa.	17	Apr. 1	Apr. 3	18.2	Apr. 2
North Branch: Cumberland, Md.	17	31	31	17.3	31
South Branch: Springfield, W. Va.	15	30	31	16.25	31
Potomac: Washington (nr)., D. C.	12	Apr. 1	Apr. 1	12.27	Apr. 1
James: Bremo Bluff, Va.	18	30	Apr. 2	23.9	Apr. 1
Columbia, Va.	18	30	Apr. 2	23.8	Apr. 1

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE (Cont'd.)	Ft			Ft	
James (Cont'd.): Richmond, Va. (Westham Bridge)	12	31	Apr. 2	14.9	Apr. 2
Richmond, Va.	9	Apr. 1	Apr. 3	10.8	Apr 2
Neuse: Neuse, N. C.	14	17	24	17.0	21
Smithfield, N. C.	13	17	26	17.9	22
Goldsboro, N. C.	14	Feb. 3 20	5 31	20.8 18.0	Feb 12 25, 26
Kinston, N. C.	14	Feb. 6 24	9 31	18.0 15.6	Feb. 16 29
Cape Fear: Lock No. 2, Elizabethtown, N. C.	20	18	25	28.4	21
Yadkin: Yadkin College, N. C.	18	31	Apr. 1	18.2	31
Rocky: Norwood, N. C.	16	16 31	17 Apr. 1	E22.0 E18.0	17 31
Waccamaw: Conway, S. C.	7	3	7	7.1	4-5
Pee Dee: Cheraw, S. C.	30	17 19 31	18 20 Apr. 2	31.0 30.3 36.0	17 19 31-Apr. 1
Peedee, S. C.	19	Feb. 2 11	9 Apr. 18	24.9 25.5 24.6 24.4 22.6 26.4	Feb. 7 Feb. 11 Feb. 18 Feb. 24-25 24 Apr. 10
Black: Kingstree, S. C.	12	Feb. 28	1	12.1	Feb. 29
Saluda: Pelzer, S. C.	6	30	1	9.1	31
Chappells, S. C.	13	30	31	15.1	31
Broad: Gaffney, S. C.	10	31	31	11.2	31
Blair, S. C.	14	17 30	19 1	16.8 19.9	17 31
Catawba: Catawba, N. C.	8	31	1	10.7	31
North Fork Edisto: Orangburg, S.C.	8	31	Apr. 12	10.3	Apr. 6
Edisto: Givhans, S. C.	10	Feb. 1	29	11.5	22
Savannah: Millhaven, Ga.	15	1	28		
Clyo, Ga.	11	Jan. 9	1	13.1 16.6 17.3 17.0 17.0	Jan. 18-20 Feb. 8 Feb. 18-20 Feb. 29 Mar. 5
Ogeechee: Dover, Ga.	7	Feb. 1	23	9.2 9.5 9.6 8.2 7.4 7.4	Feb. 3 Feb. 7 Feb. 18 6 15 20
Ocmulgee: Macon, Ga.	18	31	1	19.6	31
Oconee: Milledgeville, Ga.	20	31	1/	25.5	31
Mount Vernon, Ga.	16	7 9	7 10	 15.3	 9
Altamaha: Charlotte, Ga.	15	Feb. 8	15	20.2	Feb. 16
Satilla: Atkinson, Ga.	13	Feb. 22	10	15.8	Feb. 26
EAST GULF OF MEXICO DRAINAGE					
Apalachicola: Blountstown, Fla.	15	Feb. 2 31	27 1	19.4 18.0	Feb. 17 6, 7
Black Warrior: Tuscaloosa Lock & Dam, Ala.	47	3	5	53.7	4
Tombigbee: Amory, Miss.	20	3 16	7 17	24.7 20.8	4 16
Fulton, Miss.	16	4 12 18	6 12 18	17.6 16.0 16.0	4 12 18
Macon, Miss.	20	3 16	12 18	28.7 21.8	4 17
Tibbie, Miss.	23	4	6	26.6	4
Tupelo, Miss.	21	3	3	23.8	3
Aberdeen, Miss.	34	4	8	36.7	5
Gainesville, Ala.	36	5	19	41.9	12
Demopolis Lock & Dam, Ala.	48	5	22	56.4	10
Lock 3, Whitfield, Ala.	33	3	26	54.9	11
Lock 2, Pennington, Ala.	46	5	25	56 6	11

FLOOD STAGE DATA

(All dates in March unless otherwise specified)

MARCH 1960

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft.			Ft.	
EAST GULF OF MEXICO DRAINAGE (Cont'd.)					
Tombigbee (Cont'd.): Lock 1, Jackson, Ala.	31	6	28	36.8 38.5	13 17, 18
Pearl: Edinburg, Miss.	20	4	11	24.4	6
Jackson, Miss.	18	Jan. 31	27	27.95 30.25	Feb. 10 12
Monticello, Miss.	19	4	22	24.0	17
Columbia, Miss.	17	15	23	19.3	19
Bogalusa, La.	15	Jan. 7	31	16.7 17.4 18.7 18.5 19.2	Jan. 10 Jan. 22 Feb. 10 Feb. 23 22
Pearl River, La.	12	Feb. 4	4	14.2 14.0 12.7	Feb. 10 Feb. 25 1
		6	31	14.8	24
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Yellow Medicine: Granite Falls, Minn.	6	29	29	7.7	29
		30	Apr. 4	7.4	Apr. 1
		Apr. 7	Apr. 11	7.2	Apr. 9
Redwood River: Redwood Falls, nr, Minn.	6	28	Apr. 2	10.8	30
Cottonwood: New Ulm, Minn.	11	29	Apr. 4	12.1 11.4	30 Apr. 4
Root: Hokah, Minn.	47	28	29	48.5	28
Kickapoo: Steuben, Wis.	8	27	Apr. 2	9.2	30
Turkey: Garber, Iowa	11	28	Apr. 1	23.25	30
Maquoketa: Maquoketa, Iowa	13	30	Apr. 2	19.0	31
Wapsipinicon: Independence, Iowa	12	30	31	15.5	30
DeWitt, Iowa	10	30	Apr. 9	11.7	Apr. 3
East Branch Pecatonica: Blanchardville, Wis.	11	30	31	14.2	30
Pecatonica: Darlington, Wis.	11	29	Apr. 1	16.2	30
Martintown, Wis.	11	30	Apr. 7	19.6	Apr. 1
Freeport, Ill.	13	31	Apr. 6	16.35	Apr. 2
Shirland, Ill.	E10	30	1/	E17.0	Apr. 2
Rock: Rockton, Ill.	E10	30	Apr. 11	13.5	Apr. 2
Joslin, Ill.	14	31	Apr. 10	16.1	Apr. 3
Moline, Ill.	13	Apr. 1	Apr. 10	14.1	Apr. 4
Cedar: Waterloo, Iowa	15	30	Apr. 1	18.1	31
Cedar Rapids, Iowa	13	Apr. 1	Apr. 4	16.8	Apr. 2
Iowa: Steamboat Rock, Iowa	10	29	Apr. 2	12.5	31
Marshalltown, Iowa	13	30	Apr. 6	17.5	31
Wapello, Iowa	10	30	Apr. 10	17.05	Apr. 6
North Skunk: Sigourney, Iowa	14	29	Apr. 5	25.3	31
Skunk: Oskaloosa, Iowa	15	29	Apr. 8	20.6	Apr. 3
Augusta, Iowa	15	28	Apr. 9	25.0	Apr. 3
West Fork Des Moines: Humbolt, Iowa	8	30	31	8.4	31
Boone: Webster City, Iowa	10	29	Apr. 1	12.1	30
North Raccoon: Jefferson, Iowa	10	29	Apr. 7	19.4	31
South Raccoon: Redfield, Iowa	14	29	30	15.3	30
		Apr. 1	Apr. 2	14.4	Apr. 1
Raccoon: Van Meter, Iowa	13	30	Apr. 5	21.2	Apr. 2
Des Moines, Iowa	12	30	Apr. 6	18.8	Apr. 2
North: Norwalk, Iowa	14	28	Apr. 2	21.0	30
Middle: Indianola, Iowa	15	28	Apr. 1	20.4	30
South: Ackworth, Iowa	15	28	31	22.6	30
Des Moines: Fort Dodge, Iowa	10	29	30	11.3	29
Boone, Iowa	12	29	Apr. 2	17.1	31
Des Moines, Iowa	23	31	Apr. 3	25.3	Apr. 1,2
Des Moines (Scott St.), Iowa	13	30	Apr. 6	20.0	Apr. [illegible]
MISSISSIPPI SYSTEM (Cont'd.)					
Upper Mississippi Basin (Cont'd.)					
Des Moines (Cont'd.): Tracy, Iowa	14	28	Apr. 9	22.3 23.0	31 Apr. 2
Eddyville, Iowa	15	28	Apr. 9	23.7 24.0	31 Apr. 4
Ottumwa, Iowa	9	29	Apr. 9	17.5 17.4	Apr. 1 Apr. 4
Keosauqua, Iowa	15	30	Apr. 7	18.3 18.2	Apr. 2 Apr. 5
Fox: Wayland, Mo.	15	29	Apr. 1	18.75	31
Salt: New London, Mo.	19	29	1/	22.6	30
Fox: Dayton, Ill.	12	Feb. 20	4	18.5 13.0	Feb. 21 2
		29	1/	14.8	31
Vermillion: Lowell, Ill.	10	29	1/	12.1	30
Spoon: Seville, Ill.	22	30	1	26.0	31
Sangamon: Petersburg, Ill.	497	31	1/		
Riverton, Ill.	13	28	1/		
La Moine: Ripley, Ill.	22	29	1/		
Illinois: Morris, Ill.	13	28	1/	E15.5	31
LaSalle, Ill.	20	28	1/	E26.0	31
Peoria, Ill.	18	31	1/		
Havana, Ill.	14	30	1/		
Beardstown, Ill.	14	30	1/		
Grafton, Ill.	18	31	1/		
Kaskaskia: Vandalia, Ill.	18	28	1/	E21.2	31
Carlyle, Ill.	21	30	1/		
Big Muddy: Murphysboro, Ill.	16	23	1/	E18.3	27
Mississippi: LeClaire, Iowa	10	Apr. 2	Apr. 2	10.1	Apr. 2
Davenport, Iowa	15	Apr. 2	Apr. 3	15.3	Apr. 3
Muscatine, Iowa	16	Apr. 1	Apr. 6	18.4	Apr. 3
Keithsburg, Ill.	12	30	Apr. 10	16.6	Apr. 4
Burlington, Iowa	15	31	Apr. 9	18.7	Apr. 4
Keokuk, Iowa	16	31	Apr. 10	21.8	Apr. 3
Gregory Landing, Mo.	15	31	Apr. 11	22.3 19.8	Apr. 4 Apr. 6
Quincy, Ill.	17	31	Apr. 13	24.4 23.95	Apr. 4 Apr. 7
Hannibal, Mo.	16	31	Apr. 14	23.4	Apr. 4
Louisiana, Mo.	15	31	Apr. 14	20.9	Apr. 4
Clarksville, Mo.	23	29	1/		
Winfield, Mo.	23	29	1/		
Alton, Ill.	21	31	1/		
Missouri Basin					
Little Rock: Doon, Iowa	E15	27	31	E18.0	29
Rock: Rock Rapids, Iowa	E10	29	Apr. 2	E13.8	30
Rock Valley, Iowa	11	27	Apr. 7	15.45	31
West Branch Floyd: Struble, Iowa	14	28	30	14.7	29
Floyd: Alton, Iowa	12	27	30	17.0	28
LeMars, Iowa	20	28	30	22.8	29
Merrill, Iowa	12	28	30	16.0	29
James, Iowa	16	27	31	21.9	29
Little Sioux: Spencer, Iowa	10	28	Apr. 5	13.1 13.3	28 Apr. 2
	18	28	30	20.0	29
Cherokee, Iowa	18	28	30	20.0	29
Correctionville, Iowa	19	28	Apr. 5	22.5 19.9 20.2	29 Apr. 1 Apr. 3
North Branch: Pierce, Nebr.	12	30	Apr. 7	14.5	Apr. 1
Elkhorn: Neligh, Nebr.	10	29	30	11.2	29
Norfolk, Nebr.	10	28	31	13.7	29

FLOOD STAGE DATA

(All dates in March unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.) Missouri Basin (Cont'd.)	Ft.			Ft.	
Elkhorn (Cont'd.): West Point, Nebr.	12	30	Apr. 1	16.1	31
Winslow, Nebr.	14	31	Apr. 3	18.35	Apr. 1
Waterloo, Nebr.	12	Apr. 1	Apr. 4	14.1	Apr. 2
Salt Creek: Roca, Nebr.	15	27	29	20.0	27
Ashland, Nebr.	11	28	Apr. 4	14.1	30
Platte: Ashland, Nebr.	7	29		G	
Louisville, Nebr.	9	29	Apr. 5	12.45	31
Saline: Wilson, Kans.	12	24 28	24 29	14.4 13.0	24 29
Lincoln, Kans.	30	26	29	34.85	27
Trescott, Kans.	25	26	31	29.5	29
Bow Creek: Stockton, Kans.	9	24	24	9.2	24
North Fork Solomon: Lenora, Kans.	10	21	22	13.0	22
Downs, Kans.	18	27	27	20.5	27
South Fork Solomon: Osborne, Kans.	12	26	28	17.4	27
Solomon: Beloit, Kans.	20	26 Apr. 2	30 Apr. 2	29.2 20.65	28 Apr. 2
Glasco, Kans.	22	27 Apr. 3	31 Apr. 3	32.0 22.0	29 Apr. 3
Minneapolis, Kans.	26	28	Apr. 2	28.6 30.1	28 30
Niles, Kans.	24	27	Apr. 3	28.95	31
Smoky Hill: Abilene, Kans.	22	30	Apr. 3	23.8	Apr. 1
Enterprise, Kans.	21	31	Apr. 3	22.6	Apr. 2
Stinking Water Creek: Palisade, Nebr.	10	22	22	10.8	22
Driftwood Creek: McCook, Nebr.	17	21	22	21.05	21
Red Willow Creek: Red Willow, Nebr.	12	21	22	14.1	22
Beaver Creek: Beaver City, Nebr.	16			20.0	23
Sappa Creek: Oberlin, Kans.	11	20	23	16.4	21
Stamford, Nebr.	14	24	27	17.4	25
Prairie Dog Creek: Norton, Kans.	18	22	22	20.8	22
Woodruff, Kans.	18	23	24	23.1	23
Republican: McCook, Nebr.	9	21	21	9.1	21
Cambridge, Nebr.	8	21	22	9.35	23
Orleans, Nebr.	9	21	25	12.4	23
Hardy, Nebr.	11	28	28	11.5	28
Concordia, Kans.	10	27	28	11.0	28
Clay Center, Kans.	15	27	30	19.9	28
Wakefield, Kans.	11	28	30	13.0	28
Turkey Creek: Wilber, Nebr.	12	28	Apr. 5	20.1	28
Little Blue: Deweese, Nebr.	6	24 27	25 29	#9.9 12.35	25 28
Fairbury, Nebr.	10	27	31	15.85 15.3 13.7	28 29 30
Big Blue: Waterville, Kans.	16	27	31	24.0	29
Black Vermillion: Frankfort, Kans.	19	27	29	28.6	28
Fancy Creek: Winkler, Kans.	11	27	27	16.75	27
Big Blue: Ulysses, Nebr.	15	28	Apr. 1	20.5	29-30
Seward, Nebr.	18	29	31	19.7	30
Crete, Nebr.	16	28	Apr. 5	28.0	30
Beatrice, Nebr.	16	27	Apr. 4	24.35 25.7	29 31
Barneston, Nebr.	18	27	Apr. 4	27.6	29
Marysville, Kans.	35	27	Apr. 4	40.2	29
Blue Rapids, Kans.	20	27	Apr. 5	32.7 35.3	28 30
Randolph, Kans.	22			28.1	28
Mill Creek: Paxico, Kans.	19	26	27	22.75	26-27
Delaware: Valley Falls, Kans.	22	28	28	25.0	28
MISSISSIPPI SYSTEM (Cont'd.) Missouri Basin (Cont'd.)	Ft.			Ft.	
Wakarusa: Lawrence, Kans.	23	27	28	26.3	27
Stranger Creek: Tonganoxie, Kans.	23	27	Apr. 1	26.85	29
South Grand: Brownington, Mo.	19	30	30	E19.5	30
Kansas: Manhattan, Kans.	17	27	Apr. 5	21.2	29
Wamego, Kans.	19	29	29	19.0	29
Topeka, Kans.	21	30	30	20.9	30
LeCompton, Kans.	17	28	30	19.7	29
Lawrence, Kans.	18	28	30	19.3	29
Thompson Fork: Trenton, Mo.	20	29	29	20.5	29
Grand: Gallatin, Mo.	21	28	1		
Chillicothe, Mo.	24	28	Apr. 3	31.4	31
Brunswick, Mo.	12	28	Apr. 21	24.1	Apr. 1
Marais des Cygnes: Quenemo, Kans.	28	26	28	31.4	27
Ottawa, Kans.	23	27	28	24.0	27
Osawatomie, Kans.	28	25	30	32.6	28
LaCygne, Kans.	25	25	Apr. 1	29.3	29
Trading Post, Kans.	24	27	Apr. 1	25.85	31
Osage: Schell City, Mo.	25	22	1	29.2	27
Missouri: Nebraska City, Nebr.	18	30	Apr. 11	21.2	Apr. 5
Rulo, Nebr.	17	30	Apr. 11	22.5	Apr. 6
St. Joseph, Mo.	17	29	Apr. 12	22.0	Apr. 6
Atchison, Kans.	22	30	Apr. 12	25.0	Apr. 7
Fort Leavenworth, Kans.	19	30	Apr. 11	21.9	Apr. 4
Kansas City, Mo.	22	30	Apr. 7	22.8	Apr. 4
Lexington, Mo.	22	29	Apr. 13	27.6	Apr. 4
Waverly, Mo.	18	29	Apr. 13	25.7	Apr. 4
Boonville, Mo.	21	29	Apr. 13	28.3	Apr. 6
Jefferson City, Mo.	23	31	Apr. 13	27.3	Apr. 6
Hermann, Mo.	21	29	Apr. 15	28.0 28.3	Apr. 6 Apr. 7
St. Charles, Mo.	25	29	Apr. 16	32.2	Apr. 8
Ohio Basin					
French Creek: Meadville, Pa.	57	30	Apr. 2	60.8	Apr. 1
Allegheny: Olean, N. Y.	10	30	Apr. 4	13.1	Apr. 1
Salamanca, N. Y.	10	30	Apr. 1	10.6	31
Warren, Pa.	17	31	Apr. 1	18.0	31
Franklin, Pa.	17	31	Apr. 1	18.0	31
Lock 9, Rimerton, Pa.	21	31	Apr. 1	21.9	31
Lock 8, Mosgrove, Pa.	24	31	Apr. 1	24.8	31
Lock 7, Kittanning, Pa.	23	31	Apr. 1	23.2	31
Lock 5, Freeport, Pa.	21	30	Apr. 3	23.8	31
Lock 4, Natrona, Pa.	20	31	Apr. 2	21.4	31
Lock 3, Acemtonia, Pa.	20	31	Apr. 2	20.9	Apr. 1
Cheat: Parsons, W. Va.	11	30 Apr. 3	31 Apr. 4	13.1 12.4	31 Apr. 4
Monongahela: Lock 4, Charleroi, Pa.	24	31	Apr. 1	26.0	31
McKeesport, Pa.	12	31	1	13.3	31
Lock 2, Braddock, Pa.	26	31	Apr. 1	27.3	31
Shenango: Sharpsville, Pa.	10	30	31		
Sharon, Pa.	12	30	Apr. 1	12.8	31
Muskingum: Marietta, Ohio	35	Apr. 2	Apr. 2	35.2	Apr. 2
Skillet Fork: Wayne City, Ill.	15	24 30	27 1	16.9 17.9	25 31
Wabash: Wabash, Ind.	12	29	1	15.65	29
Lafayette, Ind.	11	29	1		
Covington, Ind.	16	30	1		
Montezuma, Ind.	14	29	1		

FLOOD STAGE DATA

(All dates in March unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft.			*Ft.*	
MISSISSIPPI SYSTEM (Cont'd.) Ohio Basin (Cont'd.)					
Wabash (Cont'd.) Terre Haute, Ind.	14	30	1		
Saline: Harrisburg, Ill.	13	18 31	24 1	16.2	22
South Chickamauga Creek: Chickamauga, nr. Tenn.	10	2	5	15.4	3
Tennessee: Whitesburg, Tenn.	560	3	6	561.85	3
Ohio: Pittsburgh, Pa.	25	31	Apr. 2	27.7	Apr. 1
Dasheilds Dam, Pa.	26	31	Apr. 1	28.2	Apr. 1
Montgomery Dam, Pa.	32	31	Apr. 1	35.1	Apr. 1
Dam 7, Midland, Pa.	30	31	Apr. 2	37.6	Apr. 1
Dam 8, Newell, W. Va.	32	31	Apr. 2	36.8	Apr. 1
Dam 9, New Cumberland, W.Va.	34	31	Apr. 2	36.0	Apr. 1
Dam 10, Steubenville, Ohio	33	31	Apr. 2	37.2	Apr. 1
Dam 12, Wheeling, W. Va.	36	31	Apr. 2	39.5	Apr. 1
Dam 13, McMechen, W. Va.	37	31	Apr. 3	42.1	Apr. 1
Dam 15, Duffy, Ohio	37	Apr. 1	Apr. 3	38.7	Apr. 2
Arkansas Basin					
Pawnee: Sanford, Kans.	22			24.7	22
Little Arkansas: Sedgwick, Kans.	18	26	26	18.1	25
Walnut: Albert, Kans.	24	22	24	25.0	23
Verdigris: Coyville, Kans.	28	24	24	29.0	24
Cottonwood: Emporia, Kans.	20	23	26	21.9	25
Neosho: Emporia, Kans.	22	27	28	24.4	28
Neosho Rapids, Kans.	22	25	26	22.4	25
Burlington, Kans.	27	27	28	28.4	26

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft.			*Ft.*	
MISSISSIPPI SYSTEM (Cont'd.) Arkansas Basin (Cont'd.)					
Neosho (Cont'd.): LeRoy, Kans.	23	25	27	23.4	27
Iola, Kans.	15	24	29	15.7	26-28
Arkansas: Great Bend, Kans.	8	22	25	8.6	23
Hutchinson, Kans.	6	22	28	8.0	26
Lower Mississippi Basin					
Tallahatchie: Swan Lake, Miss.	26	18	20	26.0	18
Yazoo: Yazoo City, Miss.	29	3	3	29.1	3
Big Black: Pickens, Miss.	16	3	18	19.0	6
Bovina, Miss.	28	3	22	36.4	8
WEST GULF OF MEXICO DRAINAGE					
Calcasieu: Hineston, La.	12	 17	8 20	13.1 12.6	6 19
Sabine: Mineola, Tex.	14	4	8	14.7	5
Logansport, La.	25	7	10	26.0	8
Deweyville, Tex.	14	Feb. 24	23	14.5	Feb. 29-2
PACIFIC SLOPE DRAINAGE					
Sacramento Basin					
Sacramento: Colusa, Calif.	62	8	9	62.9	9
Tisdale, Calif.	46	8	11	47.6	9
Fremont, Calif.	34	8	11	34.7	9
Columbia Basin					
Santiam: Jefferson, Oreg.	13	30	30	13.4	30
Pudding: Aurora, Oreg.	15	10	10	15.75	10

*	Tentative
E	Estimated
G	Gage washed away
1	Continued at end of month
#	Highest stage observed

RAWINSONDE DATA

Average monthly values

ALBANY, N. Y. (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	- 6.4	78	272	[illegible]
1,000	31	134			283	5.2
950	31	534	- 6.8	68	322	8.9
900	31	956	- 8.8	[illegible]	342	14.2
850	31	1,398	-10.2	65	320	13.0
800	31	1,863	-11.9	60	312	15.0
750	31	2,355	-13.8	57	297	15.7
700	31	2,878	-15.9	54	289	17.1
650	31	3,433	-18.5	51	284	19.0
600	31	4,027	-21.8	51	276	22.0
550	31	[illegible]	-25.4	51	276	24.3
500	31	5,349	-29.6	47	271	25.3
450	31	6,088	-34.7		276	26.6
400	31	6,907	-39.9		274	30.9
350	31	7,810	-44.7		275	38.1
300	31	8,831	-49.4		274	41.0
250	31	10,015	-52.8		270	44.7
200	31	11,451	-53.3		271	50.3
175	31	12,312	-52.7		270	48.6
150	31	13,309	-52.4		[illegible]	46.8
125	31	14,490	-52.1		272	44.9
100	31	15,933	-52.8		269	40.0
80	31	17,374	-52.4		265	37.7
60	30	19,235	-51.5		268	34.0
50	29	20,418	-50.5		265	35.2
40	29	21,875	-49.0		263	34.2
30	29	23,772	-47.1		258	30.7
25	27	24,981	-46.2		255	29.0
20	27	26,468	-44.8		258	31.7
15	24	28,406	-43.1		260	32.8
10	21	31,128	-41.3		263	43.9
7	14	33,633	-38.5			

ALBUQUERQUE, N. MEX. (838 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,619	4.4	55	14	1.4
1,000	31	146				
950	31	570				
900	31	1,023				
850	31	1,497				
800	31	1,994	5.6	43	292	4.1
750	31	2,515	2.9	43	285	11.1
700	31	3,075	- .8	44	294	16.1
650	31	3,656	- 4.9	46	287	19.8
600	31	4,287	- 9.2	45	279	22.7
550	31	4,948	-13.6	41	280	25.5
500	31	5,674	-18.6	39	288	25.6
450	31	6,444	-24.0	35	295	19.2
400	31	7,303	-30.2		286	16.3
350	31	8,239	-37.0		293	15.5
300	[illegible]	9,286	-45.4			
250	31	10,478	-54.2			
200	30	11,887	-59.6			
175	[illegible]	12,722	-59.6			
150	29	13,688	-60.8			
125	29	14,815	[illegible]			
100	29	16,179	-64.6			
80	29	17,541	-65.2			
60	28	19,308	-62.6			
50	28	20,439	-59.8			
40	26	21,847	-56.3			
30	[illegible]	23,688	-52.8			
25	25	24,867	-51.4			
20	22	26,329	-48.6			
15	15	28,234	-45.7			
10						
7						

AMARILLO, TEX. (892 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,095	0.5	78	215	4.7
1,000	31	165				
950	31	583				
900	31	1,024				
850	31	1,485	3.4	[illegible]	241	10.9
800	31	1,978	4.1	47	269	12.6
750	31	2,497	2.0	46	284	15.5
700	31	3,055	- 1.1	44	287	22.7
650	31	3,635	- 4.7	40	290	23.5
600	31	4,268	- 8.9	38	287	28.0
550	31	4,928	-13.6	34	288	29.9
500	31	5,655	-18.9		288	35.2
450	31	6,422	-24.4		285	37.9
400	31	7,281	-30.8		284	41.2
350	31	8,215	-37.7		286	46.4
300	31	9,261	-45.4		286	52.7
250	30	10,453	-53.7		288	56.3
200	28	11,856	-59.4		284	59.1
175	28	12,688	-59.4		282	63.9
150	28	13,656	-59.8		283	62.8
125	27	14,786	-61.5		282	56.0
100	23	16,158	-64.2		280	45.3
80	21	17,527	-63.6		278	36.1
60	20	19,300	-62.0		276	23.5
50	17	20,432	-59.3		286	13.2
40	16	21,835	-56.9		277	13.0
30	14	23,675	-53.2		288	16.7
25	13	24,847	-52.4		273	11.7
20	6	26,322	-50.7			
15						
10						
7						

ANCHORAGE, ALASKA (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	30	- 7.7	62	2	6.2
1,000	30	64			356	8.5
950	30	462	- 6.2	47	25	13.0
900	30	888	- 6.1	44	40	11.3
850	30	1,334	- 7.9	45	52	8.5
800	30	1,803	-10.8	50	82	6.6
750	30	2,295	-14.0	50	99	8.0
700	30	2,817	-17.7	47	101	7.2
650	30	3,363	-21.6	43	100	6.0
600	30	3,952	-25.5	41	98	5.2
550	30	4,571	-29.9	39	90	4.9
500	30	5,251	-34.6	38	93	6.6
450	30	5,975	-39.3		85	5.8
400	30	6,778	-44.6		111	1.7
350	30	7,664	-48.5		17	1.9
300	30	8,671	-51.6		307	3.5
250	30	9,854	-51.5		299	6.0
200	29	11,314	-50.1		288	11.5
175	28	12,182	-49.4		285	13.0
150	28	13,193	-49.1		291	14.0
125	28	14,390	-49.0		291	15.9
100	28	15,852	-49.7		285	17.9
80	28	17,312	-50.0		289	20.6
60	27	19,204	-50.1		293	23.1
50	27	20,394	-50.6		291	21.6
40	25	21,849	-51.1		296	25.3
30	22	23,721	-51.5		299	28.0
25	21	24,922	-51.3		304	27.4
20	18	26,452	-50.0		311	23.5
15	18	28,332	-50.0		327	31.1
10	10	31,106	-47.8			
7						

[illegible] (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	3.1	75	125	9.5
1,000	[illegible]	[illegible]			127	10.3
950	31	491	.5	75	142	17.7
900	31	927	- 2.4	74	156	20.2
850	31	1,379	- 5.5	75	164	20.4
800	31	1,853	- 8.0	73	177	20.0
750	31	2,349	-10.5	68	188	18.8
700	31	2,881	-13.6	63	202	18.8
650	31	3,434	-17.1	59	212	19.6
600	31	4,037	-21.0	59	214	25.1
550	31	4,669	-25.3	58	214	23.9
500	31	5,361	-30.3	[illegible]	219	26.8
450	31	6,095	-35.8	52	225	29.1
400	31	6,913	-41.5		224	30.9
350	31	7,809	-47.0		226	30.5
300	31	8,819	-51.6		253	23.9
250	31	9,993	-54.5		247	18.3
200	30	11,425	-54.6		[illegible]	[illegible]
175	29	12,272	-53.1		271	22.2
150	28	13,260	-52.0		280	20.8
125	27	14,432	-51.9		279	20.0
100	27	15,877	-52.3		283	22.3
80	27	17,319	-52.5		290	21.0
60	[illegible]	19,180	-52.3		314	21.6
50	25	20,360	-52.6		325	16.3
40	25	21,797	-53.4		329	22.3
30	24	23,642	-54.1		328	26.0
25	21	24,800	-54.2		326	27.8
20	20	26,223	-54.0		342	34.6
15	16	28,123	-52.5			
10	[illegible]	30,770	-51.7			
7						

ATHENS, GA. (991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	0.5	82	288	2.1
1,000	31	170				
950	31	575	1.6	59	282	5.6
900	31	1,018	.6	53	287	8.7
850	31	1,477	.3	45	276	15.9
800	31	1,962	- .9	44	273	22.9
750	31	2,475	- 2.7	46	275	29.3
700	31	3,021	- 5.2	49	276	34.4
650	31	3,595	- 7.9	47	277	41.0
600	31	4,220	-11.2	44	276	47.8
550	31	4,876	-15.3		274	53.2
500	31	5,597	-19.9		273	58.9
450	31	6,366	-25.4		276	55.2
400	31	7,215	-31.5		267	63.7
350	31	8,147	-38.2		266	72.9
300	31	9,192	-45.6		268	80.1
250	31	10,387	-52.9		269	85.5
200	31	11,808	-57.6		270	88.4
175	31	12,649	-57.5		271	84.5
150	31	13,622	-57.9		270	79.3
125	31	14,767	-60.0		274	67.4
100	31	16,154	-62.0		273	57.5
80	27	17,538	-62.3		271	42.0
60	26	19,325	-59.8		274	31.5
50	25	20,471	-56.3		270	16.5
40	24	21,901	-53.1		271	13.8
30	22	23,778	-49.2		272	11.5
25	20	24,986	-47.3		235	3.5
20	17	26,459	-45.8		263	14.0
15	13	28,375	-43.8			
10						
7						

BARROW, ALASKA (1026 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	-23.1	59	289	0.8
1,000	31	201	-19.7	64	[illegible]	3.3
950	31	585	-17.6	62	355	2.7
900	31	988	-15.7	65	22	4.7
850	31	1,419	-15.9	61	1	4.7
800	31	1,875	-17.1	49	347	6.2
750	31	2,360	-18.8	47	356	7.2
700	31	2,869	-21.1	42	342	10.1
650	31	3,413	-23.9	42	339	12.0
600	31	3,995	-27.1	40	339	15.5
550	31	4,615	-30.9	38	340	19.6
500	31	5,289	-35.0		343	22.0
450	31	6,013	-39.7		341	20.8
400	31	6,816	-45.0		341	29.5
350	31	7,698	-50.3		341	32.3
300	31	8,692	-55.5		335	34.2
250	30	9,849	-58.3		333	33.2
200	30	11,258	-56.1		323	25.8
175	30	12,110	-54.6		312	24.3
150	30	13,098	-54.1		307	22.5
125	30	14,268	-53.9		300	25.6
100	30	15,702	-53.8		294	31.1
80	30	17,133	-54.6		289	34.2
60	28	18,980	-55.0		291	38.1
50	27	20,167	-54.9		290	43.3
40	24	21,580	-55.9		288	46.6
30	20	23,492	-55.6		289	54.0
25	16	24,762	-54.5		294	52.1
20	12	26,298	-51.0			
15	8	28,482	-46.6			
10	5	31,257	-44.6			
7						

BARTER IS., ALASKA (1025 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	15	-25.1	67	239	[illegible]
1,000	29	198	-21.8	68	308	2.7
950	29	574	-19.1	63	217	1.7
900	29	981	-18.0	58	313	.6
850	29	1,408	-17.8	53		.0
800	29	1,860	-18.8	51	25	1.4
750	29	2,331	-20.5	48	24	3.7
700	29	2,847	-22.8	49	17	4.9
650	29	3,378	-25.5	51	1	6.8
600	29	3,963	-28.8	49	353	9.5
550	29	4,571	-32.7	46	353	10.1
500	29	5,245	-37.0		351	11.9
450	29	5,958	-41.5		352	13.8
400	29	6,758	-46.7		354	16.1
350	29	7,634	-51.6		353	16.7
300	29	8,624	-55.8		349	18.1
250	29	9,780	-56.3		342	17.5
200	28	11,191	-54.3		320	19.4
175	28	12,049	-53.6		312	20.6
150	28	13,040	-53.4		309	22.5
125	28	14,213	-53.4		305	25.5
100	27	15,650	-53.9		301	30.5
80	26	17,094	-54.1		295	35.4
60	23	18,997	-54.0		294	42.0
50	23	20,168	-54.5		295	46.0
40	22	21,592	-54.8		295	51.3
30	19	23,482	-54.9		297	57.1
25	17	24,726	-54.1		304	48.2
20	15	26,242	-53.1		317	46.4
15	9	28,494	-45.7			
10	6	31,227	-46.3			
7						

BETHEL, ALASKA (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	-13.4	67	8	13.6
1,000	31	126			11	[illegible]
950	31	522	- 9.2	48	[illegible]	17.5
900	31	940	- 9.6	41	29	14.0
850	31	1,380	-10.3	39	30	10.7
800	31	1,847	-11.5	35	23	13.8
750	31	2,339	-13.7	33	19	13.8
700	31	2,862	-16.6	34	14	17.1
650	31	3,415	-19.9	34	11	13.6
600	31	4,005	-23.8	34	29	14.6
550	31	4,634	-27.8		38	14.6
500	31	5,315	-32.2		32	12.0
450	31	6,052	-37.2		23	16.9
400	31	6,858	-42.5		11	8.2
350	31	7,751	-47.4		358	15.7
300	31	8,760	-52.0		340	11.9
250	31	9,936	-53.9		317	13.4
200	31	11,371	-52.4			
175	30	12,236	-50.9			
150	30	13,241	-50.0			
125	30	14,434	-49.7			
100	29	15,893	-50.2			
80	28	17,344	-50.0			
60	27	19,223	-50.1			
50	26	20,423	-50.3			
40	[illegible]	21,880	-50.7			
30	23	23,763	-50.2			
25	[illegible]	24,990	-49.9			
20	[illegible]	26,452	-49.9			
15	14	28,275	-49.7			
10	9	30,974	-49.8			
7						

BISMARCK, N. DAK. (960 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	[illegible]	[illegible]	52	60	0.6
1,000	31	185				
950		565				.6
900	31	1,003	- 9.0	71	[illegible]	4.9
850	31	1,447	- 8.2	64	[illegible]	9.1
800	31	1,919	- 7.6	[illegible]	305	14.6
750	31	2,417	- 9.7	53	310	19.8
700	31	2,950	-12.4	49	309	23.9
650	31	3,512	-15.4	48	305	27.4
600	31	4,114	-19.0	48	306	31.7
550	31	4,753	-22.8	45	305	36.1
500	31	5,451	-27.2	43	306	41.0
450	31	6,197	-32.7	43	303	43.5
400	31	7,022	-38.9		296	44.7
350	31	7,926	-45.4		294	46.8
300	31	8,939	-52.2		295	51.5
250	31	10,103	-57.5		295	57.7
200	30	11,505	-58.0		302	54.8
175	30	12,350	-56.3		300	53.2
150	30	13,331	-55.6		296	51.5
125	30	14,493	-55.5		297	48.6
100	30	15,914	-56.0		[illegible]	41.4
80	30	17,332	-56.2		295	36.5
60	29	19,161	-55.8		292	32.4
50	29	20,323	-55.2		289	29.7
40	28	21,746	-54.4		[illegible]	28.2
30	28	23,590	-53.5		285	26.4
25	26	24,759	-52.7		272	30.7
20	23	26,196	-51.7		271	36.3
15	19	28,075	-49.8		274	42.7
10	14	30,715	-46.4		273	59.5
7	7	32,893	-47.1			

BOISE, IDAHO (918 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	2.7	75	153	4.5
1,000	31	165				
950	31	586				
900	31	1,025	5.4	54	145	2.7
850	31	1,492	3.9	50	232	4.5
800	31	1,982	1.0	52	261	7.6
750	31	2,497	- 2.5	56	276	11.3
700	31	3,042	- 6.0	55	286	14.4
650	31	3,615	- 9.9	51	286	17.7
600	31	4,231	-13.6	46	283	21.2
550	31	4,882	-17.9	44	280	25.8
500	31	5,595	-22.6	44	276	26.8
450	31	6,355	-27.8	43	277	29.9
400	31	7,197	-34.0	42	278	35.8
350	31	8,120	-40.7		280	40.2
300	31	9,153	-48.4		281	41.8
250	31	10,331	-56.5		281	44.5
200	31	11,729	-60.6		286	44.5
175	30	12,570	-59.7		283	38.9
150	30	13,540	-58.2		288	36.7
125	30	14,685	-58.7		286	30.9
100	30	16,080	-60.4		288	27.8
80	29	17,471	-60.3		295	24.1
60	29	19,271	-58.6		295	16.3
50	29	20,419	-57.9		301	15.3
40	26	21,834	-56.7		315	16.9
30	23	23,663	-55.7		319	18.1
25	22	24,827	-54.8		310	19.4
20	21	26,263	-53.4		305	21.6
15	18	28,148	-50.6		303	24.5
10	10	30,787	-48.4			
7						

BROWNSVILLE, TEX (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	14.9	92	122	1.2
1,000	31	144	15.3	87	128	4.1
950	31	576	14.1	80	154	10.9
900	31	1,035	14.3	61	161	12.2
850	31	1,518	12.9	53	181	10.1
800	31	2,026	10.5	49	198	9.5
750	31	2,559	8.7	36	223	9.1
700	31	3,130	6.1	29	268	11.7
650	31	3,726	1.9	28	279	17.3
600	31	4,374	- 2.5		280	20.2
550	31	5,047	- 7.5		275	25.5
500	31	5,794	-12.8		274	30.3
450	31	6,584	-18.5		276	35.0
400	31	7,460	-25.0		279	40.8
350	31	8,417	-32.0		282	38.7
300	31	9,488	-40.1			
250	31	10,708	-49.3			
200	31	12,145	-57.2			
175	31	12,983	-60.5			
150	31	13,937	-63.6			
125	31	15,043	-68.3			
100	31	16,368	-72.2			
80	31	17,678	-72.8			
60	31	19,370	-69.8			
50	29	20,474	-62.4			
40	27	21,874	-56.4			
30	26	23,716	-52.3			
25	25	24,902	-49.7			
20	23	26,377	-46.3			
15	17	28,312	-41.8			
10	7	31,089	-36.4			
7						

BUFFALO, N. Y (996 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	182	- 7.7	76	237	2.5
1,000	31	146			232	1.4
950	31	545	- 6.9	70	276	4.3
900	31	969	- 9.0	66	281	7.2
850	31	1,410	-10.9	63	299	9.5
800	31	1,875	-12.4	60	303	12.8
750	31	2,366	-14.2	57	304	11.7
700	31	2,888	-16.5	54	298	12.8
650	31	3,441	-19.1	49	295	15.7
600	31	4,035	-22.0	47	293	18.3
550	31	4,669	-25.6	43	294	20.2
500	31	5,357	-29.7	41	292	22.9
450	31	6,096	-34.7		285	25.5
400	31	6,915	-39.9		281	29.7
350	31	7,817	-45.4		278	33.6
300	31	8,831	-51.1		273	38.5
250	31	10,008	-54.2		274	40.6
200	31	11,439	-53.8		278	43.7
175	31	12,298	-53.3		278	41.2
150	31	13,292	-52.6		278	39.8
125	31	14,470	-52.8		277	37.9
100	31	15,909	-53.1		274	33.2
80	31	17,349	-52.9		271	29.3
60	30	19,209	-52.4		272	26.6
50	30	20,391	-51.4		270	22.2
40	28	21,846	-49.8		265	22.0
30	27	23,741	-47.4		264	26.2
25	27	24,951	-46.1		264	25.1
20	27	26,441	-44.5		261	30.1
15	26	28,381	-42.4		263	33.8
10	20	31,095	-41.4		256	45.7
7	10	33,473	-39.2			

BURRWOOD, LA. (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	12.0	90	48	3.5
1,000	31	158	13.4	78	21	2.9
950	31	593	11.6	[illegible]	282	3.7
900	31	1,041	10.4	55	268	8.2
850	31	1,516	8.7	50	271	13.8
800	31	2,016	6.4	53	273	16.9
750	31	2,545	3.4	53	273	22.0
700	31	3,102	.9	44	274	26.8
650	31	3,694	- 2.3	42	274	32.1
600	31	4,326	- 5.7	36	275	37.1
550	31	4,997	- 9.8		274	42.6
500	31	5,733	-14.7		274	48.4
450	31	6,518	-20.3		273	51.9
400	31	7,385	-26.6		274	55.6
350	31	8,336	-33.6		276	60.0
300	31	9,400	-41.7		277	64.3
250	31	10,613	-50.1		275	74.6
200	31	12,046	-56.8		273	83.4
175	31	12,887	-58.9		273	82.8
150	30	13,842	-61.5		273	84.1
125	30	14,965	-65.1		270	72.1
100	30	16,313	-68.8		274	59.3
80	29	17,646	-69.3		275	48.8
60	27	19,378	-66.0		272	27.0
50	27	20,497	-61.0		272	16.7
40	27	21,904	-56.1		290	10.5
30	27	23,747	-51.9		303	1.0
25	26	24,934	-49.3		84	1.7
20	26	26,405	-46.6		92	5.8
15	24	28,324	-43.6		97	10.3
10	19	31,070	-39.6		96	17.1
7	5	33,501	-36.9			

CAPE HATTERAS, N. C. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	3.8	78	339	5.4
1,000	31	143	3.8	70	333	8.2
950	31	555	1.9	65	305	9.9
900	31	[illegible]	.2	57	288	12.6
850	31	1,452	- 1.5	50	272	17.9
800	31	1,933	- 3.0	43	[illegible]	23.1
750	31	2,441	- 4.8	42	266	30.9
700	31	2,983	- 7.1	41	266	35.6
650	31	3,553	- 9.4	39	267	41.0
600	31	4,175	-12.3		267	47.8
550	31	4,827	-16.1		[illegible]	52.1
500	31	5,547	-20.6		269	63.0
450	31	6,310	-25.7		269	64.5
400	31	7,162	-31.7		270	70.5
350	31	8,094	-38.1		270	79.9
300	31	9,140	-45.4		270	83.4
250	31	10,335	-52.9		272	88.8
200	30	11,757	-55.7		271	92.3
175	30	12,607	-56.0		[illegible]	82.0
150	30	13,588	-55.8		272	75.8
125	29	14,745	-57.8		272	67.6
100	27	16,149	-59.6		270	56.2
80	26	17,550	-59.5		273	43.1
60	24	19,368	-56.7		269	27.2
50	22	20,534	-54.2		268	18.3
40	20	21,977	-51.4		261	13.2
30	18	23,860	-48.4		269	12.8
25	18	25,064	-47.3		266	8.9
20	18	26,548	-45.1		254	11.9
15	[illegible]	28,479	-43.1		259	19.6
10	11	31,238	-38.9			
7	5	33,715	-35.3			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MARCH 1960

Standard pressure surface (mb)	CARIBOU, ME. (990 MB.)						CHARLESTON, S. C. (1019 MB.)						COLD BAY, ALASKA (1008 MB.)						COLUMBIA, MO. (992 MB.)						DAYTON, OHIO (983 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	191	- 8.6	81	322	5.6	31	13	3.8	77	5	3.9	31	27	- 3.7	81	342	9.3	31	238	- 4.9	84	12	1.6	31	297	- 6.5	73	276	1.7
1,000--	31	109					31	164	5.3	67	357	4.9	31	91			348	8.9	31	173					31	164				
950----	31	507	- 8.4	75	350	8.4	31	584	4.4	59	301	4.3	31	492	- 6.2	74	353	11.5	31	578	- 4.4	72	331	2.3	31	566	- 5.3	69	314	4.1
900----	31	926	-10.0	74	357	8.7	31	1,024	3.3	56	271	9.7	31	916	- 8.3	64	356	13.4	31	1,003	- 4.5	63	304	7.4	31	990	- 6.8	64	291	5.8
850----	31	1,365	-11.4	73	357	8.2	31	1,487	2.0	54	265	17.3	31	1,359	- 9.3	51	1	13.6	31	1,454	- 4.4	56	310	12.0	31	1,435	- 8.3	61	282	9.3
800----	31	1,829	-13.2	69	343	8.2	31	1,975	.8	45	267	24.7	31	1,828	-10.6	46	6	13.8	31	1,931	- 5.1	53	305	15.9	31	1,905	-10.0	56	284	13.2
750----	31	2,316	-15.3	65	320	8.4	31	2,492	- .9	40	268	30.5	31	2,319	-13.0	40	21	12.6	31	2,432	- 6.8	52	304	20.6	31	2,401	-11.4	53	281	15.5
700----	31	2,837	-17.8	62	314	9.1	31	3,042	- 3.2	42	270	34.6	31	2,846	-15.6	35	30	9.7	31	2,972	- 9.2	49	302	24.7	31	2,930	-13.6	49	287	18.7
650----	31	3,388	-20.5	57	306	8.9	31	3,621	- 6.2	46	267	42.0	31	3,395	-18.8		16	6.4	31	3,541	-11.4	49	301	29.3	31	3,487	-16.0	48	291	21.2
600----	31	3,978	-23.7	53	299	10.1	31	4,248	- 9.8	43	270	44.5	31	3,994	-22.5		21	6.8	31	4,153	-14.6	46	299	35.9	31	4,091	-18.7	47	288	27.4
550----	31	4,609	-27.4	52	284	10.5	31	4,911	-14.0	41	269	50.5	31	4,621	-26.7		355	10.7	31	4,802	-18.5	43	299	40.0	31	4,730	-22.4	45	287	32.8
500----	31	5,291	-31.7	52	269	12.8	31	5,634	-18.6	37	271	56.2	31	5,310	-31.2		339	6.6	31	5,510	-23.5	42	298	44.3	31	5,430	-26.8	42	286	36.7
450----	31	6,025	-36.4	52	266	15.7	30	6,400	-23.9		270	58.9	31	6,041	-35.6		305	5.1	31	6,267	-28.9	38	297	48.4	31	6,177	-31.6	40	285	44.5
400----	31	6,838	-41.8		259	20.6	30	7,259	-30.1		268	61.6	31	6,864	-40.6		304	9.5	31	7,105	-35.0		295	51.7	31	7,009	-37.0		283	50.5
350----	31	7,732	-47.4		258	23.1	30	8,197	-37.0		268	64.1	31	7,764	-45.6		274	6.4	31	8,023	-41.7		296	56.3	31	7,921	-43.0		281	58.5
300----	31	8,739	-53.0		258	26.2	30	9,247	-44.6		266	71.1	31	8,781	-50.2		263	9.5	31	9,051	-48.9		296	61.4	31	8,947	-49.1		279	64.9
250----	31	9,909	-54.7		258	29.7	30	10,447	-52.2		267	73.3	30	9,971	-52.8		277	12.8	31	10,230	-55.5		290	64.5	31	10,129	-54.0		277	66.6
200----	31	11,341	-53.0		259	34.2	30	11,873	-57.1		269	80.1	27	11,418	-52.1		271	18.5	31	11,643	-57.4		285	66.5	31	11,558	-54.5		275	63.5
175----	30	12,198	-51.9		261	37.1	30	12,718	-57.2		269	78.9	26	12,283	-46.4		270	17.5	31	12,488	-56.9		284	62.0	31	12,414	-54.1		277	59.7
150----	29	13,202	-51.1		260	33.0	29	13,686	-58.6		270	74.8	26	13,292	-49.7		274	19.8	31	13,465	-56.5		285	54.6	31	13,403	-54.2		278	56.3
125----	28	14,392	-50.2		258	32.8	28	14,829	-60.3		272	64.9	25	14,488	-49.9		269	18.7	30	14,619	-57.2		285	49.0	31	14,570	-54.8		276	53.0
100----	28	15,849	-50.4		258	30.1	28	16,212	-62.8		268	51.7	23	15,948	-50.7		263	15.0	30	16,027	-58.3		282	43.7	30	15,997	-55.4		276	44.1
80-----	26	17,311	-50.1		255	36.7	28	17,584	-62.9		268	48.2	22	17,407	-50.4		287	14.2	30	17,430	-58.2		284	34.6	29	17,417	-55.6		271	37.7
60-----	26	19,192	-49.0		254	27.0	27	19,367	-59.2		272	27.4	20	19,290	-49.8		297	7.6	30	19,245	-57.2		283	27.8	28	19,255	-54.7		273	27.8
50-----	26	20,390	-48.6		252	23.9	27	20,517	-55.7		272	23.1	20	20,482	-50.0		272	15.0	30	20,400	-56.0		281	20.6	28	20,427	-53.0		273	22.9
40-----	25	21,855	-48.1		252	28.0	26	21,945	-53.0		272	16.1	20	21,944	-49.5		284	11.9	30	21,826	-53.8		282	16.7	28	21,873	-50.9		267	20.6
30-----	25	23,754	-47.1		250	29.0	26	23,817	-48.8		251	8.5	16	23,860	-49.6				29	23,691	-50.4		271	15.7	28	23,759	-48.1		259	20.4
25-----	22	24,972	-46.4		251	30.5	26	25,018	-47.4		232	1.9	11	24,973	-50.9				27	24,888	-48.5		266	14.4	28	24,967	-46.2		253	18.1
20-----	20	26,464	-45.1		258	42.4	25	26,501	-45.0		154	1.9	10	26,438	-49.9				26	26,365	-46.3		254	16.9	28	26,457	-44.7		255	19.6
15-----	18	28,370	-44.5		262	51.7	23	28,429	-42.5		177	6.4	8	28,363	-48.9				21	28,261	-44.2		255	25.5	26	28,387	-43.0		255	23.3
10-----	14	31,084	-43.2		266	60.0	21	31,169	-39.7		187	4.3													25	31,126	-41.4		252	28.6
7------	10	33,501	-41.0		266	62.4	10	33,599	-36.4		240	18.7													12	33,590	-38.8		254	40.2
5------	7	35,763	-39.3				7	35,943	-33.1																					

Standard pressure surface (mb)	DENVER, COLO. (836 MB.)						DODGE CITY, KANS. (926 MB.)						EL PASO, TEX. (881 MB.)						ELY, NEV. (808 MB.)						FAIRBANKS, ALASKA (1002 MB.)					
SURFACE	31	1,611	- 2.2	71	209	2.7	31	792	- 2.6	87	234	1.2	30	1,197	9.7	39	292	2.3	31	1,908	- 2.0	71	200	4.7	31	135	-18.4	57	22	4.7
1,000--	31	164					31	177					30	130					31	181					31	150			49	6.8
950----	31	579					31	589					30	563					31	602					31	540	-14.1	46	67	10.5
900----	31	1,019					31	1,019	.5	74	310	4.9	30	1,021					31	1,045					31	951	-14.4	46	88	10.7
850----	31	1,477					31	1,479	1.8	60	304	8.7	30	1,498	11.5	32	277	5.8	31	1,507					31	1,381	-15.7	50	87	7.8
800----	31	1,964	1.6	51	283	5.2	31	1,968	1.5	54	314	13.6	30	2,003	9.5	33	274	12.0	31	1,994	1.2	58	218	2.9	31	1,837	-16.6	50	72	9.7
750----	31	2,480	- .2	50	311	9.7	31	2,486	- .7	51	317	18.8	30	2,534	6.0	34	274	17.1	31	2,513	.4	47	263	3.3	31	2,322	-17.9	48	65	9.5
700----	31	3,032	- 3.8	50	312	15.3	31	3,034	- 3.3	50	308	19.6	30	3,096	1.8	34	279	19.0	31	3,064	- 3.4	50	278	10.7	31	2,835	-20.5	45	59	7.8
650----	31	3,610	- 7.5	51	308	21.0	31	3,613	- 6.9	47	295	23.1	30	3,685	- 2.1	31	279	18.8	31	3,641	- 6.8	44	285	17.1	31	3,378	-23.6	44	60	5.8
600----	31	4,232	-12.2	53	310	26.0	31	4,236	-11.1	44	289	26.2	30	4,320	- 6.1	28	285	19.6	31	4,267	-11.0	44	284	21.0	31	3,961	-27.1	38	40	3.3
550----	31	4,889	-16.7	51	308	28.8	31	4,893	-15.6	42	286	28.2	30	4,987	-10.5		278	20.8	30	4,919	-15.3	42	286	24.3	31	4,577	-31.3	35	22	4.1
500----	31	5,602	-21.9	48	306	30.5	31	5,612	-20.4	38	284	34.4	30	5,722	-15.7		276	23.7	30	5,641	-19.6	36	287	31.9	31	5,252	-36.0		2	2.1
450----	31	6,364	-27.4	45	304	33.2	31	6,376	-26.0	36	282	35.6	30	6,497	-21.7		278	24.1	30	6,409	-24.8		289	33.2	31	5,971	-41.2		360	2.9
400----	31	7,207	-33.7	40	305	35.9	31	7,227	-32.5	35	277	38.1	30	7,365	-28.4		286	24.1	30	7,265	-30.8		286	31.7	31	6,767	-46.3		12	4.5
350----	31	8,130	-40.9		300	40.8	31	8,154	-39.8		273	37.3	30	8,309	-35.6		288	26.0	30	8,198	-38.3		273	28.4	31	7,645	-51.0		359	6.8
300----	31	9,161	-48.8		298	46.4	31	9,190	-47.4		254	33.4	30	9,365	-43.7		279	27.8	30	9,240	-46.4		273	26.6	31	8,640	-54.2		343	7.8
250----	31	10,340	-56.2		295	52.7	31	10,375	-54.9				30	10,567	-52.2		280	35.2	29	10,432	-55.0		266	15.3	30	9,807	-54.4		333	10.5
200----	31	11,740	-60.8		294	52.1	30	11,777	-60.0				30	11,987	-58.8				29	11,831	-62.1		279	15.2	30	11,244	-52.7		320	12.2
175----	31	12,572	-59.7		291	52.8	29	12,620	-59.8				30	12,826	-59.3				29	12,656	-62.2		276	19.6	30	12,109	-51.9		312	13.6
150----	31	13,540	-58.3		292	46.8	29	13,589	-58.3				29	13,786	-61.4				29	13,614	-60.4		279	19.6	29	13,107	-51.4		302	16.9
125----	31	14,684	-59.9		293	43.9	29	14,733	-59.8				29	14,908	-64.8				29	14,750	-60.5		287	16.9	28	14,295	-51.4		299	19.2
100----	31	16,073	-60.9		295	36.5	28	16,123	-61.0				28	16,258	-68.1				29	16,133	-62.3		295	12.2	27	15,738	-52.3		288	21.6
80-----	31	17,463	-60.8		293	27.6	27	17,506	-60.5				28	17,597	-67.8				29	17,506	-62.8		289	15.5	25	17,167	-52.8		296	26.8
60-----	28	19,256	-59.0		295	17.9	26	19,307	-58.6				28	19,336	-65.2				29	19,285	-60.9		314	8.9	24	19,025	-52.8		296	29.7
50-----	27	20,401	-57.8		296	13.8	25	20,456	-57.3				28	20,456	-60.9				28	20,421	-59.6		327	7.6	23	20,216	-53.2		298	36.7
40-----	23	21,819	-55.2		288	10.5	24	21,878	-54.5				28	21,857	-56.1				27	21,820	-57.4		331	8.7	17	21,618	-52.9		299	43.9
30-----	21	23,672	-51.7		285	8.5	21	23,742	-50.9				24	23,703	-52.9				25	23,649	-55.3		315	7.4	16	23,432	-54.3		295	46.8
25-----	21	24,861	-49.6		275	11.5	21	24,936	-48.5				23	24,880	-50.9				22	24,812	-54.0		321	9.5	13	24,675	-54.1		299	46.6
20-----	20	26,335	-46.5		239	6.8	21	26,412	-46.1				20	26,348	-47.8				18	26,232	-52.2				11	26,197	-52.4		309	50.5
15-----	14	28,229	-45.3				18	28,361	-43.0				13	28,270	-44.0				16	28,099	-49.9				[illegible]	28,126	-51.0			
10-----							8	31,075	-38.7										9	30,760	-48.0									

Standard pressure surface (mb)	FLINT, MICH. (991 MB.)						FORT WORTH, TEX. (999 MB.)						GLASGOW, MONT. (936 MB.)						GRAND JUNCTION, COLO. (852 MB.)						GREAT FALLS, MONT. (887 MB.)					
SURFACE	31	234	- 9.5	83	278	2.3	31	180	5.3	76	38	1.9	31	696	- 9.5	87	105	2.3	31	1,474	2.2	64	117	4.1	31	1,123	- 4.1	68	232	5.1
1,000--	31	158					31	170			29	3.5	31	178					31	156					31	164				
950----	31	558	- 6.2	72	319	5.2	31	590	5.3	69	151	2.7	31	577					31	573					31	576				
900----	31	981	- 8.0	68	318	6.6	31	1,032	5.8	67	230	6.0	31	1,000	- 5.1	73	257	1.6	31	1,024					31	1,008				
850----	31	1,424	- 9.6	59	315	8.7	31	1,501	6.3	57	263	12.8	31	1,449	- 4.8	60	288	10.5	31	1,492			115	6.4	31	1,461	- 1.2	51	249	14.2
800----	31	1,890	-11.2	55	314	9.7	31	1,997	4.9	51	277	17.5	31	1,926	- 5.7	55	291	14.0	31	1,984	3.4	45	160	2.3	31	1,943	- 2.9	53	267	15.9
750----	31	2,385	-13.4	51	313	10.3	31	2,520	2.5	49	281	20.4	31	2,427	- 8.2	55	301	19.6	31	2,502	.4	47	259	5.1	31	2,447	- 5.8	54	277	16.9
700----	31	2,907	-15.6	44	310	11.7	31	3,076	- .8	46	286	23.5	31	2,963	-11.1	52	304	22.3	31	3,055	- 3.6	52	273	10.7	31	2,990	- 8.9	53	285	20.6
650----	31	3,465	-18.4	44	306	15.2	31	3,662	- 4.2	41	286	27.4	31	3,526	-14.4	50	304	27.0	31	3,632	- 7.8	55	284	14.8	31	3,556	-12.2	51	286	23.3
600----	31	4,057	-21.7	43	301	17.5	31	4,292	- 8.0	39	284	31.7	31	4,132	-17.9	48	304	32.3	31	4,254	-11.9	53	286	19.4	31	4,169	-16.4	51	285	26.6
550----	31	4,694	-25.1	42	296	20.6	31	4,955	-12.3	34	284	36.7	31	4,770	-22.2	46	305	33.8	31	4,910	-16.2	47	290	24.7	31	4,810	-21.1	52	285	29.9
500----	31	5,381	-29.1	40	293	23.9	31	5,685	-17.3	36	282	41.4	31	5,471	-27.3	45	303	36.7	31	5,626	-21.0	40	290	28.6	31	5,515	-26.1	49	288	32.1
450----	31	6,122	-34.0	38	294	28.2	31	6,457	-22.8	38	283	44.7	31	6,214	-32.9	44	301	39.8	31	6,392	-26.5		289	32.6	31	6,263	-31.5	48	289	36.9
400----	31	6,944	-39.3		292	32.4	31	7,319	-29.4	40	281	50.5	31	7,040	-38.9		299	42.9	31	7,236	-32.9		291	37.9	31	7,095	-37.3		290	41.2
350----	31	7,846	-45.5		289	35.9	31	8,259	-36.6		277	57.7	31	7,944	-45.1		300	45.1	31	8,162	-39.8		294	45.1	31	8,004	-44.0		289	45.3
300----	31	8,861	-50.9		287	42.0	31	9,310	-44.3		281	64.7	31	8,959	-51.5		300	48.4	31	9,198	-47.4		294	48.8	31	9,024	-51.0		292	51.1
250----	31	10,039	-54.0		285	48.2	31	10,509	-52.9		280	72.7	31	10,125	-57.1		300	51.3	31	10,381	-55.6		290	48.4	31	10,194	-56.8		294	52.8
200----	31	11,471	-53.7		284	48.0	31	11,926	-58.3		279	79.7	31	11,529	-58.6		300	50.5	31	11,780	-61.7		289	48.4	29	11,591	-58.7		288	47.6
175----	31	12,330	-53.4		287	44.9	31	12,765	-59.0		280	80.2	30	12,372	-57.0		297	47.8	29	12,615	-60.2		288	46.4	26	12,435	-57.2		288	45.9
150----	31	13,323	-53.2		286	44.5	31	13,730	-60.1		281	73.8	30	13,351	-55.8		303	44.9	28	13,580	-58.8		286	37.9	26	13,412	-56.6		287	43.9
125----	31	14,499	-53.2		283	41.8	31	14,861	-62.9		282	61.0	28	14,506	-55.7		298	42.4	28	14,722	-59.9		287	34.6	26	14,569	-56.7		291	36.9
100----	31	15,936	-53.5		284	36.9	30	16,229	-66.0		283	52.5	25	15,922	-56.3		299	37.1	28	16,110	-61.7		287	29.0	23	15,980	-57.2		291	35.9
80-----	30	17,375	-53.4		282	29.5	30	17,583	-65.5		284	38.9	23	17,338	-56.0		300	33.0	27	17,490	-62.5		290	22.7	22	17,397	-57.2		290	29.7
60-----	29	19,232	-52.6		278	27.4	29	19,341	-63.4		280	20.0	23	19,171	-55.3		300	30.5	26	19,273	-61.0		292	14.6	22	19,220	-57.1		295	26.8
50-----	29	20,413	-51.7		276	25.3	29	20,471	-59.7		278	14.8	22	20,332	-55.1		298	26.0	22	20,410	-59.3		297	10.7	19	20,375	-56.8		296	23.3
40-----	29	21,864	-50.6		272	22.5	28	21,882	-55.4		288	11.3	19	21,740	-54.5		288	27.2	21	21,809	-57.7		299	9.9	19	21,789	-56.8		304	23.1
30-----	29	23,750	-48.1		267	27.8	28	23,733	-51.9		278	4.5	18	23,586	-53.8		294	29.1	18	23,644	-54.7		311	11.1	16	23,607	-56.6		302	22.5
25-----	27	24,962	-46.1		262	28.0	28	24,921	-49.8		269	2.7	18	24,759	-53.2		288	32.3	17	24,817	-52.6		303	9.9	16	24,764	-56.0		299	26.6
20-----	27	26,452	-44.3		261	32.1	28	26,390	-47.3		246	1.9	18	26,199	-52.1		285	35.8	15	26,278	-50.7		290	8.5	15	26,191	-54.9		301	26.8
15-----	20	28,365	-42.7		259	47.4	28	28,309	-43.9		151	6.4	15	28,071	-50.4		274	49.5	15	28,161	-48.7		277	12.4	9	28,098	-51.4			
10-----	11	31,096	-40.0		257	63.9	26	31,059	-39.8		168	10.7	9	30,756	-47.4				12	30,863	-46.5		276	15.5	5	30,818	-48.0			
7------	5	33,643	-36.0				21	33,526	-36.9		197	13.2							9	33,223	-46.2									
5------							10	35,900	-34.1																					

See reference note at end of table

RAWINSONDE DATA

Average monthly values

GREEN BAY, WIS. (995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	210	-10.6	83	354	2.7
1,000--	31	166			356	3.1
950----	31	567	- 8.1	63	359	5.6
900----	31	983	- 9.5	61	345	5.2
850----	31	1,424	-11.1	55	334	6.0
800----	31	1,889	-12.3	44	321	8.0
750----	31	2,378	-14.4	44	315	10.5
700----	31	2,901	-16.7	41	311	12.2
650----	31	3,454	-18.9	41	305	15.0
600----	31	4,048	-22.2	42	306	18.7
550----	31	4,682	-25.9	45	307	21.6
500----	31	5,368	-29.9	43	303	25.6
450----	31	6,107	-34.6		306	29.9
400----	31	6,925	-40.1		302	32.6
350----	31	7,825	-46.0		296	34.4
300----	31	8,838	-51.5		296	39.6
250----	31	10,009	-55.5		292	41.6
200----	31	11,432	-55.1		289	44.7
175----	31	12,286	-54.5		289	42.2
150----	31	13,275	-53.8		289	40.6
125----	31	14,448	-53.7		285	37.1
100----	31	15,881	-54.2		287	35.6
80-----	31	17,313	-54.2		286	31.3
60-----	31	19,160	-53.4		283	26.6
50-----	31	20,334	-53.1		279	24.3
40-----	31	21,775	-51.8		278	22.9
30-----	31	23,647	-50.1		268	24.5
25-----	31	24,840	-48.9		268	30.1
20-----	29	26,302	-47.3		263	36.1
15-----	24	28,213	-45.1		257	42.0
10-----	14	30,994	-40.6			
7------						

GREENSBORO, N. C. (988 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	273	- 2.2	75	346	2.1
1,000--	29	172				
950----	29	581	- .4	58	328	5.6
900----	29	1,014	- 1.9	52	296	7.2
850----	29	1,468	- 3.2	48	275	9.5
800----	29	1,947	- 4.3	47	271	15.2
750----	29	2,453	- 6.3	48	276	23.1
700----	29	2,992	- 8.2	48	273	28.4
650----	28	3,560	-11.5	46	273	30.1
600----	28	4,175	-14.7	43	270	30.9
550----	28	4,825	-18.3	40	275	38.9
500----	28	5,536	-22.1		279	44.5
450----	28	6,296	-27.2		271	46.4
400----	28	7,142	-33.4		271	50.1
350----	28	8,068	-39.7			
300----	28	9,106	-46.6			
250----	28	10,298	-53.3			
200----	27	11,710	-56.4			
175----	27	12,557	-55.2			
150----	26	13,545	-55.6			
125----	26	14,704	-57.0			
100----	26	16,110	-58.7			
80-----	25	17,513	-58.9			
60-----	25	19,330	-55.6			
50-----	25	20,499	-52.7			
40-----	25	21,946	-50.9			
30-----	23	23,828	-48.6			
25-----	22	25,028	-47.3			
20-----	20	26,511	-45.2			
15-----	19	28,434	-43.0			
10-----	8	31,165	-39.7			
7------						

HILO, HAWAII (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	11	19.2	88	244	2.7
1,000--	31	141	20.4	80	278	1.4
950----	31	584	17.8	82	63	3.3
900----	31	1,045	14.9	84	69	2.7
850----	31	1,528	12.2	83	89	2.1
800----	31	2,035	10.0	73	155	1.2
750----	31	2,572	7.9	62	232	3.1
700----	31	3,137	5.2	53	252	6.8
650----	31	3,735	2.2	36	255	8.7
600----	31	4,382	- 1.0		265	10.1
550----	31	5,068	- 5.3		264	14.2
500----	31	5,814	-10.1		265	15.2
450----	31	6,610	-16.0		272	17.7
400----	31	7,494	-22.9		284	19.8
350----	31	8,458	-30.2		286	24.7
300----	31	9,537	-38.2		290	33.2
250----	31	10,768	-47.0		285	45.3
200----	31	12,219	-55.2		284	43.3
175----	31	13,062	-60.2		282	43.7
150----	31	14,012	-65.1		289	37.7
125----	30	15,111	-70.0		283	33.6
100----	29	16,423	-75.0		292	23.5
80-----	27	17,723	-73.7		302	9.1
60-----	26	19,426	-67.5		287	4.7
50-----	24	20,532	-65.2		155	.6
40-----	23	21,909	-59.8		69	3.5
30-----	20	23,725	-55.5		64	3.3
25-----	16	24,897	-52.8			
20-----	12	26,333	-50.7			
15-----						
10-----						
7------						

INTERNAT. FALLS, MINN. (977 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	360	-13.5	72	3	0.8
1,000--	31	184				
950----	31	578	-10.5	70	253	.6
900----	31	992	-11.6	69	265	3.7
850----	31	1,429	-12.9	65	287	7.0
800----	31	1,891	-13.5	56	304	8.9
750----	31	2,379	-15.1	50	302	11.3
700----	31	2,900	-17.1	49	306	13.6
650----	31	3,452	-19.4	47	307	17.7
600----	31	4,046	-22.2	44	307	20.8
550----	31	4,679	-25.8	47	307	25.3
500----	31	5,366	-30.4	50	307	28.6
450----	31	6,103	-35.3	51	303	31.1
400----	31	6,920	-41.0		304	34.8
350----	31	7,816	-46.9		304	39.1
300----	31	8,825	-52.7		299	42.2
250----	31	9,990	-56.5		302	44.5
200----	31	11,407	-55.6		301	43.5
175----	31	12,260	-54.1		301	42.6
150----	31	13,252	-53.3		298	40.4
125----	31	14,425	-53.6		297	36.9
100----	31	15,860	-53.9		296	36.1
80-----	28	17,289	-54.1		292	33.4
60-----	26	19,132	-54.3		284	30.5
50-----	24	20,303	-54.2		283	29.0
40-----	20	21,743	-53.9		279	30.1
30-----	16	23,585	-53.9		277	32.3
25-----	14	24,734	-54.0		270	35.0
20-----	13	26,198	-51.8		271	36.9
15-----	11	28,076	-50.2		268	48.4
10-----	6	30,620	-49.0			
7------						

JACKSON, MISS. (1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	101	4.9	81	26	1.6
1,000--	31	161			34	4.3
950----	31	575	4.9	64	355	2.7
900----	31	1,021	5.2	55	290	11.1
850----	31	1,488	4.5	53	287	18.1
800----	31	1,981	3.1	48	281	22.9
750----	31	2,498	.9	45	282	26.6
700----	31	3,053	- 2.2	47	284	31.3
650----	31	3,634	- 5.5	46	283	35.4
600----	31	4,262	- 9.2	40	283	41.2
550----	31	4,923	-13.3	37	284	42.6
500----	31	5,649	-18.0		282	44.5
450----	31	6,422	-23.4		282	49.4
400----	31	7,279	-29.8		282	51.7
350----	31	8,217	-36.7		282	60.0
300----	31	9,268	-44.4		283	67.8
250----	31	10,467	-52.4		285	80.8
200----	31	11,890	-57.9		282	83.2
175----	31	12,730	-58.6		283	83.2
150----	31	13,699	-59.5		285	80.1
125----	31	14,834	-62.2		283	71.5
100----	31	16,204	-64.8		284	54.4
80-----	30	17,562	-64.7		283	38.7
60-----	30	19,329	-61.6		283	24.1
50-----	30	20,469	-57.9		285	17.7
40-----	29	21,887	-54.3		290	12.6
30-----	28	23,751	-50.4		293	2.5
25-----	27	24,947	-48.5		357	2.7
20-----	25	26,422	-45.9		94	6.4
15-----	24	28,346	-43.5		128	6.4
10-----	18	31,091	-40.0			
7------	9	33,510	-37.0			

JACKSONVILLE, FLA. (1019 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	8.1	85	357	2.5
1,000--	31	162	10.0	74	350	3.3
950----	31	585	9.0	64	306	4.1
900----	31	1,035	7.7	61	271	13.4
850----	31	1,505	5.9	54	270	20.0
800----	31	2,000	4.2	51	271	26.6
750----	31	2,521	2.1	51	271	30.3
700----	31	3,078	- .6	46	274	34.0
650----	31	3,664	- 3.7	44	276	38.3
600----	31	4,295	- 7.3	41	274	45.3
550----	31	4,962	-11.6	41	273	49.7
500----	31	5,692	-16.4	41	269	54.4
450----	31	6,468	-21.8	39	271	59.1
400----	31	7,335	-27.7		270	64.3
350----	31	8,281	-35.0		269	68.0
300----	31	9,339	-43.0		269	73.3
250----	31	10,546	-51.2		272	82.6
200----	30	11,976	-57.8		273	85.7
175----	30	12,816	-59.4		270	84.9
150----	29	13,779	-61.6		272	79.9
125----	28	14,901	-63.9		273	76.4
100----	28	16,264	-66.0		277	63.7
80-----	22	17,611	-66.7		276	59.7
60-----	22	19,364	-62.6		276	44.9
50-----	22	20,497	-58.7		276	33.0
40-----	22	21,908	-55.5		267	16.9
30-----	21	23,756	-51.7			.0
25-----	20	24,943	-49.3		87	7.8
20-----	17	26,407	-46.9		96	11.3
15-----	16	28,333	-43.9		104	14.6
10-----	7	31,059	-41.2			

JOHNSTON IS., PACIFIC AREA (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	3	24.0	83	68	10.5
1,000--	31	128	23.2	82	75	11.9
950----	31	576	20.2	81	86	12.2
900----	31	1,041	17.3	78	95	11.7
850----	31	1,528	14.8	71	95	9.3
800----	31	2,039	12.1	64	[illegible]	5.2
750----	31	2,575	9.9	51	89	2.3
700----	31	3,149	6.9	45		.0
650----	31	3,749	3.6	40	287	4.9
600----	31	4,400	- .1	35	284	7.4
550----	31	5,084	- 4.0	30	284	8.5
500----	31	5,838	- 8.6		284	12.8
450----	31	6,640	-13.9		287	19.0
400----	31	7,533	-20.0		284	25.1
350----	30	8,512	-26.0		287	34.6
300----	30	9,612	-33.7		282	42.6
250----	30	10,869	-42.7		281	51.7
200----	29	12,340	-53.6		282	54.0
175----	28	13,188	-59.5		284	54.0
150----	27	14,140	-65.9		286	49.5
125----	22	15,223	-72.0		287	39.4
100----	13	16,532	-77.5		305	19.2
80-----	8	17,808	-78.2			
60-----	7	19,475	-69.9			
50-----	5	20,569	-66.4			
40-----						
30-----						
25-----						
20-----						
15-----						
10-----						

KING SALMON, ALASKA (1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	15	-10.4	72	349	10.9
1,000--	31	77			350	18.3
950----	31	475	- 8.4	55	8	20.0
900----	31	895	- 8.5	51	8	16.3
850----	31	1,338	- 9.3	49	14	14.6
800----	31	1,805	-11.2	49	19	13.6
750----	31	2,295	-13.9	44	14	12.6
700----	31	2,820	-17.1	42	14	14.0
650----	31	3,367	-20.8	40	11	14.0
600----	31	3,959	-24.6	40	8	14.8
550----	31	4,584	-28.8	38	4	17.3
500----	31	5,264	-33.3	37	360	18.7
450----	31	5,996	-38.2		1	17.7
400----	31	6,801	-42.8		358	17.5
350----	31	7,694	-46.9		350	20.2
300----	31	8,707	-50.3		346	18.8
250----	31	9,894	-51.2		333	17.3
200----	31	11,347	-50.1		322	15.3
175----	30	12,212	-49.1		309	15.5
150----	30	13,225	-48.7		301	13.2
125----	29	14.432	-48.9		301	15.0
100----	26	15,885	-49.9		292	17.1
80-----	22	17,329	-50.6		280	16.1
60-----	22	19,202	-50.8		273	20.4
50-----	20	20,398	-50.8		281	20.6
40-----	18	21,866	-50.7		286	15.9
30-----	14	23,786	-50.5		297	16.1
25-----	14	24,973	-50.6		306	14.2
20-----	11	26,423	-50.2		307	21.0
15-----	5	28,333	-49.5			
10-----						

KOTZEBUE, ALASKA (1024 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	5	-16.9	68	15	3.3
1,000--	29	183	-13.2	56	23	3.7
950----	29	578	-11.7	46	39	7.0
900----	29	990	-12.0	40	30	9.3
850----	29	1,427	-12.4	37	18	9.5
800----	29	1,889	-13.8		15	11.3
750----	29	2,374	-16.0		7	13.8
700----	29	2,896	-18.7	35	7	18.1
650----	29	3,440	-21.5	37	3	21.0
600----	29	4,032	-24.6		1	22.9
550----	29	4,656	-28.6	40	357	24.1
500----	29	5,339	-33.0		356	27.2
450----	29	6,069	-37.9		355	29.1
400----	29	6,878	-43.3		353	33.2
350----	29	7,766	-49.0		351	35.2
300----	29	8,766	-54.6		350	36.5
250----	29	9,923	-58.3		352	31.5
200----	29	11,331	-56.6		339	22.3
175----	29	12,183	-54.4		319	20.0
150----	28	13,173	-53.1		321	21.2
125----	26	14,348	-52.9		311	21.4
100----	25	15,785	-52.6		301	24.5
80-----	20	17,172	-52.9		299	29.1
60-----	18	19,020	-52.8		293	34.4
50-----	16	20,180	-53.4			
40-----	13	21,645	-53.6			
30-----	9	23,477	-53.8			
25-----	7	24,700	-52.2			
20-----	5	26,254	-50.4			
15-----	5	28,133	-49.7			
10-----						

LAKE CHARLES, LA. (1020 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	8.6	82	25	3.7
1,000--	31	164	9.5	67	51	5.8
950----	31	593	9.9	63	20	2.1
900----	31	1,041	9.6	55	291	4.7
850----	31	1,515	7.8	53	283	11.5
800----	31	2,013	5.8	51	273	18.1
750----	31	2,538	2.9	48	280	20.2
700----	31	3,096	.0	42	280	24.5
650----	31	3,685	- 3.4	43	280	28.8
600----	31	4,316	- 6.7	35	277	32.3
550----	31	4,986	-10.8	30	277	34.2
500----	31	5,718	-15.8		275	39.1
450----	31	6,497	-21.5		280	45.9
400----	31	7,363	-27.9		281	43.5
350----	31	8,308	-35.0			
300----	31	9,366	-42.8			
250----	31	10,574	-51.3			
200----	31	12,000	-58.0			
175----	29	12,831	-59.6			
150----	29	13,794	-61.3			
125----	28	14,922	-63.5			
100----	28	16,281	-67.3			
80-----	27	17,620	-67.5			
60-----	25	19,370	-63.8			
50-----	24	20,503	-57.8			
40-----	24	21,923	-54.4			
30-----	22	23,786	-50.5			
25-----	22	24,978	-48.1			
20-----	21	26,462	-44.8			
15-----	20	28,401	-40.9			
10-----	11	31,177	-36.9			

LANDER, WYO. (827 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,696	- 3.6	64	271	2.7
1,000--	31	166				
950----	31	576				
900----	31	1,013				
850----	31	1,476				
800----	31	1,959	- .6	46	311	3.3
750----	31	2,471	- 2.6	46	326	8.7
700----	31	3,017	- 5.7	48	304	13.8
650----	31	3,585	- 9.6	48	296	18.1
600----	31	4,208	-13.5	44	300	27.4
550----	31	4,858	-17.5	37	302	30.3
500----	31	5,572	-22.4	36	300	35.8
450----	31	6,329	-28.3		296	37.3
400----	31	7,171	-34.8		297	41.6
350----	31	8,090	-41.6		291	45.9
300----	31	9,118	-49.4		292	48.8
250----	31	10,291	-57.2		298	50.1
200----	31	11,685	-61.1		295	51.5
175----	31	12,517	-59.7		294	46.2
150----	31	13,487	-57.9		293	42.2
125----	31	14,636	-58.4		292	41.4
100----	29	16,037	-59.2		294	36.5
80-----	29	17,436	-58.4		294	27.6
60-----	29	19,241	-58.9		291	24.9
50-----	29	20,387	-57.9		296	18.3
40-----	29	21,800	-56.3		302	18.1
30-----	27	23,633	-54.4		306	17.1
25-----	24	24,800	-53.5		300	17.1
20-----	20	26,273	-50.5		288	18.1
15-----	20	28,155	-49.1		274	20.0
10-----	11	30,809	-48.0			

LAS VEGAS, NEV. (939 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	660	10.7	43	250	2.9
1,000--	31	130				
950----	31	559				
900----	31	1,017	13.1	31	298	3.1
850----	31	1,495	10.7	32	295	6.0
800----	31	1,997	7.4	33	291	8.4
750----	31	2,516	4.0	34	287	8.7
700----	31	3,083	.9	30	284	10.9
650----	31	3,669	- 3.0	29	287	14.4
600----	31	4,305	- 6.7		288	18.8
550----	31	4,974	-11.1		283	23.7
500----	31	5,705	-16.1		286	28.8
450----	31	6,479	-22.1		283	31.1
400----	31	7,345	-28.7		284	35.2
350----	31	8,287	-36.2		284	42.6
300----	31	9,338	-44.8		288	44.9
250----	31	10,533	-54.2		286	48.8
200----	31	11,936	-62.0		277	54.4
175----	31	12,762	-61.5		278	57.9
150----	31	13,720	-60.5		277	52.8
125----	31	14,853	-61.9		278	46.2
100----	31	16,226	-64.4		278	40.0
80-----	30	17,584	-64.8		280	27.6
60-----	30	19,348	-62.2		288	17.5
50-----	27	20,486	-60.1		306	9.5
40-----	25	21,888	-57.2		321	5.6
30-----	22	23,726	-53.6		312	4.7
25-----	21	24,908	-52.1		335	4.1
20-----	20	26,353	-50.2		64	2.9
15-----	14	28,265	-47.5			
10-----						

LIHUE, HAWAII (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	36	19.5	84	12	5.2
1,000--	30	150	19.9	79	23	6.6
950----	30	590	16.8	81	46	9.9
900----	30	1,050	13.8	82	43	7.4
850----	30	1,531	10.8	82	37	4.1
800----	30	2,035	8.8	67	347	1.9
750----	30	2,566	7.3	46	275	3.5
700----	30	3,134	4.5	37	271	5.6
650----	30	3,728	1.9	29	275	7.2
600----	30	4,376	- 1.8		274	9.9
550----	30	5,057	- 6.2		277	10.7
500----	30	5,803	-11.1		276	15.2
450----	30	6,596	-16.8		276	17.3
400----	30	7,479	-23.5		279	21.0
350----	30	8,442	-30.7		276	23.5
300----	30	9,518	-39.1		282	29.9
250----	29	10,744	-47.7		283	40.6
200----	29	12,192	-55.3		290	47.0
175----	29	13,036	-59.5		289	42.0
150----	29	13,991	-64.0		299	33.4
125----	28	15,096	-68.9		301	30.3
100----	26	16,415	-73.8		295	22.0
80-----	20	17,718	-73.6		292	15.9
60-----	19	19,429	-66.5		265	6.0
50-----	17	20,539	-63.8		14	.6
40-----	17	21,920	-58.9		79	8.0
30-----	16	23,743	-54.9		80	12.6
25-----	14	24,912	-52.4		91	10.3
20-----	13	26,361	-49.6		80	8.5
15-----	9	28,264	-46.6			
10-----						

LITTLE ROCK, ARK. (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	79	1.0	77	333	2.9
1,000--	31	172	.2	72	5	3.9
950----	31	585	.8	66	358	5.4
900----	31	1,020	1.1	61	325	7.4
850----	31	1,480	.8	54	299	11.5
800----	31	1,967	.4	45	296	16.3
750----	31	2,488	- 1.3	42	297	21.0
700----	31	3,032	- 3.7	41	290	27.2
650----	31	3,615	- 6.8	40	290	29.1
600----	31	4,235	-10.5	39	285	31.7
550----	31	4,895	-14.8		282	31.1
500----	31	5,616	-19.7		279	35.4
450----	31	6,384	-25.1		283	40.8
400----	31	7,237	-31.4		283	39.6
350----	31	8,169	-38.4		286	45.1
300----	31	9,211	-46.4			
250----	31	10,401	-53.9			
200----	28	11,813	-58.0			
175----	28	12,656	-57.8			
150----	28	13,628	-58.3			
125----	27	14,775	-60.6			
100----	27	16,159	-62.0			
80-----	26	17,538	-62.3			
60-----	25	19,328	-59.7			
50-----	25	20,476	-56.2			
40-----	25	21,905	-52.9			
30-----	25	23,773	-49.6			
25-----	24	24,968	-47.9			
20-----	21	26,445	-45.9			
15-----	17	28,371	-43.3			
10-----						

McGRATH, ALASKA (1004 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	103	-17.6	58	351	5.2
1,000--	31	134			8	7.8
950----	31	524	-12.4	50	38	14.2
900----	31	937	-13.5	48	51	16.3
850----	31	1,372	-13.2	45	49	16.9
800----	31	1,833	-13.7	41	43	15.0
750----	31	2,317	-15.4	38	34	13.4
700----	31	2,840	-18.4	37	22	13.6
650----	31	3,384	-21.8		23	9.7
600----	31	3,974	-25.6		10	12.0
550----	31	4,594	-29.4		14	8.4
500----	31	5,274	-33.9		29	8.7
450----	31	5,997	-39.0		17	4.7
400----	31	6,804	-44.1		351	4.9
350----	31	7,690	-48.9		352	4.7
300----	31	8,694	-52.1		321	4.3
250----	31	9,870	-53.2		283	9.9
200----	30	11,308	-51.7		284	13.2
175----	30	12,177	-50.6		285	14.6
150----	30	13,183	-49.9		271	15.5
125----	30	14,375	-49.9		283	16.9
100----	30	15,832	-50.7		286	19.8
80-----	30	17,288	-50.4		292	16.9
60-----	30	19,166	-50.5		292	18.5
50-----	30	20,354	-51.0		296	17.5
40-----	28	21,807	-51.6		295	23.5
30-----	28	23,671	-52.6		315	21.2
25-----	27	24,872	-52.5		329	20.8
20-----	23	26,378	-51.1		347	19.2
15-----	13	28,423	-48.4			
10-----	5	31,293	-44.2			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MARCH 1960

Standard pressure surface (mb)	MEDFORD, OREG. (971 MB.)						MERIDA, MEXICO (1016 MB.)						MIAMI, FLA. (1018 MB.)						MIDLAND, TEX. (916 MB.)						MONTGOMERY, ALA. (1013 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	401	5.1	89	286	0.6	31	11	18.5	88	91	4.9	31	4	16.0	83	74	1.0	29	871	5.0	74	108	0.8	31	61	5.4	74	12	2.1
1,000	31	160					31	145	20.4	82	101	9.9	31	160	17.1	71	63	1.9	29	153					31	166	5.4	70	18	2.5
950	31	583	6.5	78	265	2.7	31	583	18.8	77	123	16.3	31	594	14.9	66	221	1.6	29	575					31	582	4.3	64	312	2.1
900	31	1,023	5.7	68	219	4.3	31	1,052	17.1	65	125	10.7	31	1,054	12.2	68	233	3.9	29	1,021	6.7	66	164	2.1	31	1,025	4.6	52	285	11.9
850	31	1,489	3.5	66	222	8.4	31	1,539	14.9	56	136	3.1	31	1,532	10.3	54	251	7.4	29	1,492	8.2	50	244	8.2	31	1,491	4.4	50	283	20.0
800	31	1,979	.7	65	232	13.8	31	2,050	12.4	50	256	3.7	31	2,034	8.1	38	261	9.9	29	1,994	8.4	40	282	15.0	31	1,983	2.8	52	281	26.0
750	31	2,494	- 1.9	59	239	16.5	31	2,588	10.2	41	264	6.2	31	2,566	6.0	30	256	15.3	29	2,525	5.8	34	285	17.7	31	2,502	.5	52	280	30.1
700	31	3,041	- 5.1	58	252	20.6	31	3,161	7.6	32	283	7.2	31	3,129	3.4	27	265	20.6	29	3,086	2.0	32	298	19.8	31	3,056	- 2.1	47	278	34.8
650	31	3,615	- 8.2	51	255	23.5	31	3,766	3.6	31	291	8.7	31	3,723	.0	29	267	25.1	29	3,675	- 2.2	31	294	23.1	31	3,637	- 5.3	44	278	40.8
600	31	4,238	-12.0	45	261	28.6	31	4,413	- .3	29	295	13.0	31	4,364	- 3.7		268	28.4	29	4,311	- 6.3	32	289	24.9	31	4,266	- 9.1	43	276	44.1
550	31	4,894	-15.9	39	264	33.2	31	5,098	- 4.7		290	17.1	31	5,035	- 8.1		270	31.5	29	4,978	-10.9		281	30.5	31	4,927	-13.3	37	277	49.2
500	31	5,612	-20.4	37	268	34.6	31	5,848	- 9.3		280	20.8	31	5,782	-12.7		272	35.8	29	5,713	-16.0		283	34.6	31	5,654	-18.0		277	54.0
450	31	6,377	-26.4	38	266	37.9	31	6,652	-14.7		264	55.6	31	6,570	-16.8		267	44.5	29	6,491	-21.9		282	32.4	31	6,425	-23.6		276	56.2
400	31	7,223	-33.0	35	265	39.8	31	7,538	-21.4		261	58.1	31	7,451	-23.9		268	49.9	29	7,355	-28.5		277	35.9	31	7,285	-29.7		274	61.8
350	31	8,149	-40.2		268	36.7	31	8,509	-28.7		263	58.5	31	8,411	-31.0		268	56.2	29	8,298	-35.8		277	41.6	31	8,224	-36.5		273	68.6
300	31	9,184	-48.0		268	39.6	31	9,592	-37.4		264	54.0	31	9,487	-39.1		268	62.6	29	9,351	-44.0				31	9,275	-44.3		270	73.4
250	31	10,364	-56.2		272	37.9	31	10,825	-46.7		278	27.8	31	10,712	-48.1		267	70.3	28	10,556	-53.0				31	10,476	-52.5		272	74.2
200	31	11,763	-60.9		271	25.5	30	12,276	-55.8		276	34.8	31	12,158	-55.9		264	80.2	26	11,963	-58.8				31	11,898	-57.7		272	79.1
175	31	12,595	-59.9		273	24.5	30	13,116	-60.5		272	42.7	31	13,000	-59.8		264	81.8	25	12,799	-59.1				31	12,739	-58.1		271	81.0
150	31	13,560	-58.9		275	25.8	30	14,065	-65.5		270	48.6	31	13,955	-63.7		268	75.2	23	13,758	-60.7				31	13,708	-59.4		272	80.8
125	31	14,703	-59.6		278	23.5	30	15,159	-70.9		269	42.0	31	15,062	-67.9		265	67.4	23	14,886	-63.7				30	14,842	-61.4		272	70.9
100	31	16,094	-60.7		285	17.9	30	16,466	-74.7		270	32.8	31	16,391	-71.6		267	56.2	22	16,241	-66.5				30	16,218	-64.2		272	56.2
80	29	17,489	-60.3		279	15.5	29	17,756	-75.8		281	17.9	31	17,706	-71.7		267	40.8	21	17,588	-66.4				29	17,585	-64.2		273	40.4
60	29	19,286	-58.7		303	11.3	29	19,432	-71.0		285	8.5	31	19,412	-67.9		263	22.7	21	19,343	-63.4				29	19,357	-61.3		271	26.0
50	28	20,435	-58.2		328	10.9	29	20,531	-63.4		236	5.2	29	20,516	-62.1		263	13.6	19	20,469	-60.7				27	20,496	-57.2		276	16.3
40	27	21,843	-57.1		331	8.5	29	21,922	-58.1		66	1.2	28	21,911	-57.6		269	7.2	17	21,874	-56.1				26	21,924	-53.3		276	9.9
30	26	23,669	-55.4		323	11.1	29	23,759	-52.6		72	10.7	25	23,753	-52.6		71	3.3	16	23,717	-52.8				24	23,794	-49.7		254	4.3
25	25	24,835	-54.0		331	8.9	29	24,941	-50.4		79	16.1	25	24,937	-50.1		81	11.5	16	24,901	-50.4				22	24,997	-47.3		101	1.6
20	24	26,276	-52.3		341	10.3	29	26,405	-47.6		90	20.2	19	26,402	-46.5		87	14.6	14	26,369	-46.7				22	26,481	-45.0		104	8.4
15	23	28,148	-51.0		311	9.9	26	28,319	-43.4		104	29.7	14	28,333	-42.5		91	23.9	11	28,294	-43.6				19	28,416	-41.8		114	8.9
10	13	30,807	-47.7				15	31,069	-38.1				8	31,097	-39.7				5	31,045	-39.5				6	31,145	-38.8			
7	5	33,114	-48.5																											

Standard pressure surface (mb)	NANTUCKET, MASS. (1012 MB.)						NASHVILLE, TENN. (999 MB.)						N. Y. INT. AP, IDLEWILD (1017 MB.)						NOME, ALASKA (1022 MB.)						NORFOLK, VA. (1018 MB.)					
SURFACE	31	14	- 1.4	74	325	6.8	30	177	- 0.9	86	293	1.6	31	5	- 2.1	62	316	7.8	31	7	-12.5	68	41	3.7	31	9	1.3	64	352	5.2
1,000	31	112	- 1.5	69	315	6.8	30	166			359	5.6	31	137	- 2.9	59	324	9.1	31	170	- 9.5	56	29	4.9	31	153	.9	61	330	6.8
950	31	517	- 2.9	67	312	9.7	30	573	- 1.2	68	282	7.0	31	543	- 4.4	61	328	11.1	31	565	- 9.5	48	25	5.1	31	562	- .9	59	310	8.7
900	31	947	- 5.2	63	305	11.7	30	1,005	- 2.4	66	283	11.5	31	967	- 6.5	62	314	11.5	31	984	-10.5	42	35	6.8	31	995	- 2.3	51	291	9.9
850	31	1,395	- 7.1	56	295	14.0	30	1,460	- 3.0	62	293	14.0	31	1,412	- 8.2	59	299	12.6	31	1,424	-11.2	39	34	10.3	31	1,448	- 3.9	42	279	15.3
800	31	1,866	- 8.9	50	283	15.2	30	1,940	- 3.8	58	283	21.0	31	1,882	-10.2	56	287	14.4	31	1,889	-12.4	36	29	13.0	31	1,924	- 5.8	39	277	19.0
750	31	2,362	-11.2	47	278	18.1	30	2,445	- 5.1	53	282	26.0	31	2,380	-12.4	54	276	18.3	31	2,379	-14.5	39	25	13.0	31	2,427	- 7.4	43	270	23.1
700	31	2,891	-13.8	46	277	19.0	30	2,989	- 7.4	49	283	30.5	31	2,902	-14.9	53	278	22.3	31	2,901	-17.1	37	6	16.3	31	2,964	-10.0	43	267	28.4
650	31	3,449	-17.0	48	275	22.2	30	3,560	-10.2	45	283	36.9	31	3,462	-17.8	50	277	24.7	31	3,451	-19.9	39	9	19.2	31	3,528	-12.3	44	271	36.7
600	31	4,048	-20.4	46	270	25.6	30	4,178	-13.3	41	281	43.5	31	4,055	-20.8	47	277	28.6	31	4,045	-23.2	38	11	15.3	31	4,141	-15.7	39	271	42.9
550	31	4,681	-24.1	46	266	29.1	30	4,832	-17.2	37	281	44.3	31	4,693	-24.3	42	274	31.7	31	4,673	-27.3	37	3	17.9	31	4,788	-19.3		269	47.6
500	31	5,378	-28.3	42	266	33.0	30	5,546	-21.6		283	49.5	31	5,383	-28.7		275	36.7	31	5,357	-31.9		4	20.0	31	5,496	-23.6		268	55.2
450	31	6,121	-33.1	42	268	39.2	30	6,306	-27.0		282	55.2	31	6,129	-33.2		277	42.9	31	6,091	-36.8		4	25.8	31	6,254	-28.5		270	62.8
400	31	6,947	-38.4		270	45.7	30	7,155	-33.1		276	57.9	31	6,949	-38.3		277	49.4	31	6,901	-42.4		4	24.5	31	7,094	-34.3		269	70.9
350	31	7,855	-43.5		267	49.5	30	8,077	-40.0		273	62.4	31	7,857	-43.8		271	57.5	31	7,792	-48.2		4	28.4	31	8,017	-40.4		268	78.1
300	31	8,881	-48.6		268	55.6	30	9,118	-46.9		270	67.0	31	8,880	-49.1		271	62.8	31	8,794	-53.7		6	31.1	31	9,052	-47.3		265	85.3
250	31	10,070	-52.0		271	54.0	30	10,308	-53.6		274	68.2	31	10,065	-52.8		266	64.5	31	9,955	-57.1		359	29.1	31	10,241	-53.4		263	88.6
200	31	11,514	-52.7		272	55.4	30	11,728	-57.0		273	71.1	31	11,502	-54.0		269	64.1	30	11,361	-55.6		348	22.5	31	11,668	-54.9		267	79.5
175	31	12,376	-52.7		268	49.5	30	12,576	-56.0		272	66.8	31	12,360	-53.7		264	60.4	29	12,214	-53.5		336	16.9	31	12,522	-55.1		267	71.3
150	31	13,373	-52.7		266	45.1	28	13,553	-56.9		271	55.2	31	13,352	-53.4		268	55.2	29	13,210	-52.0		320	14.8	31	13,506	-55.7		269	69.4
125	31	14,550	-53.0		266	43.1	27	14,701	-57.9		272	55.4	31	14,525	-53.5		267	51.5	29	14,392	-51.5		311	15.9	30	14,669	-56.9		268	62.8
100	30	15,990	-53.7		265	37.9	25	16,107	-59.8		272	42.4	31	15,957	-54.2		263	43.3	29	15,842	-51.3		297	20.4	30	16,078	-58.5		271	50.9
80	29	17,425	-53.2		263	30.5	24	17,502	-59.7		277	35.2	31	17,388	-54.5		266	36.9	29	17,292	-50.9		292	21.4	30	17,480	-57.8		267	39.4
60	27	19,287	-51.7		257	24.7	23	19,307	-58.2		280	25.6	31	19,235	-52.6		269	24.3	29	19,167	-50.5		284	25.1	30	19,306	-55.4		272	27.2
50	26	20,470	-50.5		250	21.8	22	20,460	-55.4		279	18.3	31	20,416	-51.9		264	20.4	29	20,356	-50.8		287	26.6	30	20,475	-53.1		264	21.0
40	[illegible]	21,933	-48.3		251	19.4	19	21,892	-53.2		281	15.7	31	21,869	-49.6		263	19.0	29	21,807	-51.4		296	29.7	30	21,923	-50.4		259	12.2
30	23	23,839	-46.6		239	15.9	19	23,759	-49.8		270	14.6	30	23,762	-47.5		258	15.0	29	23,673	-52.1		294	33.4	29	23,812	-47.9		250	9.1
25	23	25,053	-45.5		251	14.2	18	24,957	-47.6		277	4.7	29	24,973	-46.2		255	13.6	29	24,852	-52.5		292	35.0	29	25,020	-46.4		243	8.2
20	22	26,543	-44.0		255	15.0	17	26,436	-45.7		258	12.2	28	26,462	-44.6		259	15.9	29	26,294	-52.7		296	35.8	28	26,504	-44.5		232	8.4
15	20	28,483	-42.7		268	14.0	13	28,345	-44.0		255	12.6	24	28,380	-43.2		256	19.6	26	28,220	-51.2		293	40.2	28	28,440	-42.1		243	5.6
10	16	31,251	-39.5		277	21.6	5	31,080	-41.8				21	31,120	-40.5		266	26.2	16	31,047	-47.9		300	28.6	25	31,204	-39.3		251	10.7
7	8	33,655	-38.1										13	33,560	-38.7				10	33,516	-45.7				16	33,653	-36.8		266	17.9
5																									7	36,031	-34.8			

Standard pressure surface (mb)	NORTH PLATTE, NEBR (918 MB.)						OAKLAND, CALIF. (1019 MB.)						OKLAHOMA CITY, OKLA. (973 MB.)						OMAHA, NEBR. (972 MB.)						PEORIA, ILL. (996 MB.)					
SURFACE	31	848	- 5.5	83	50	0.8	31	6	10.6	82	336	1.7	31	392	0.4	84	88	1.4	31	403	- 8.4	83	33	2.9	31	201	- 7.4	84	341	2.9
1,000	31	170					31	164	11.0	74	306	2.1	31	173					31	180					31	168			356	3.9
950	31	573					31	590	9.6	66	295	4.3	31	585	.8	67	180	2.9	31	580	- 7.3	74	17	2.5	31	573	- 5.4	68	325	5.6
900	31	1,003	- 4.8	79	216	.6	31	1,040	8.7	55	301	5.4	31	1,021	2.0	63	228	6.2	31	1,003	- 5.0	66	305	4.3	31	995	- 6.5	60	300	6.8
850	31	1,456	- 2.1	72	297	6.6	31	1,512	7.3	44	284	5.4	31	1,483	2.8	55	271	9.9	31	1,453	- 4.6	62	302	8.9	31	1,441	- 7.7	58	298	8.4
800	31	1,939	- 1.3	56	314	11.1	31	2,009	5.1	37	269	6.6	31	1,972	1.8	49	277	15.2	31	1,930	- 5.2	55	305	12.6	31	1,912	- 8.7	52	305	12.4
750	31	2,445	- 3.5	51	309	15.9	31	2,530	2.3	35	271	9.7	31	2,492	.1	48	290	19.0	31	2,437	- 7.0	55	310	16.3	31	2,407	- 9.9	50	307	16.1
700	31	2,995	- 6.5	52	308	19.6	31	3,088	- .7	36	269	14.4	31	3,041	- 2.6	48	288	25.1	31	2,971	- 9.3	54	310	21.8	31	2,942	-11.6	46	304	21.2
650	31	3,564	-10.1	53	309	25.8	31	3,671	- 4.0	37	274	17.1	31	3,621	- 6.1	44	286	27.0	31	3,539	-12.3	52	305	23.5	31	3,501	-14.1	45	304	24.3
600	31	4,184	-13.8	53	308	28.4	31	4,304	- 8.0	37	275	18.1	31	4,248	-10.1	39	285	32.4	31	4,149	-15.7	52	305	27.6	31	4,112	-17.4	46	299	25.8
550	31	4,832	-18.2	47	301	32.4	31	4,965	-12.5		277	23.5	31	4,904	-14.7	37	284	35.2	31	4,798	-19.6	51	304	32.8	31	4,753	-21.3	43	299	33.0
500	31	5,546	-23.0	46	301	36.7	31	5,697	-17.6	37	279	26.8	31	5,627	-19.4		285	39.6	31	5,503	-24.0	45	301	39.2	31	5,457	-25.5	40	300	36.1
450	31	6,302	-28.3	41	298	38.5	31	6,463	-23.2	36	276	32.8	31	6,395	-25.0		285	46.4	31	6,262	-29.1	43	300	40.4	31	6,205	-30.5	39	294	40.6
400	31	7,146	-34.3		299	44.3	31	7,330	-29.5	36	276	37.3	31	7,247	-31.6		284	51.9	31	7,097	-35.3	40	298	43.1	31	7,042	-36.2		296	44.7
350	31	8,066	-41.7		299	47.8	31	8,270	-36.5		276	42.6	31	8,178	-38.6		283	57.9	31	8,014	-42.2		297	47.8	31	7,956	-42.8		296	45.9
300	31	9,094	-49.5		296	49.4	31	9,321	-44.9		275	46.2	31	9,221	-46.2		285	63.1	31	9,039	-50.0		299	52.7	31	8,980	-49.6		296	41.8
250	31	10,267	-56.9		295	54.2	31	10,515	-54.6		273	52.8	30	10,409	-54.0		285	70.1	31	10,210	-56.9		299	51.3	30	10,162	-55.4		289	46.2
200	31	11,666	-60.3		294	56.7	31	11,914	-62.3		275	50.9	29	11,821	-59.0		282	74.4	31	11,616	-58.2		294	52.5	29	11,584	-56.1		289	57.3
175	31	12,502	-58.8		295	51.1	31	12,738	-61.8		274	51.3	29	12,659	-58.8		283	73.6	31	12,459	-57.0		293	51.5	29	12,436	-55.4		289	55.6
150	31	13,472	-57.9		289	47.4	31	13,696	-60.9		275	46.0	28	13,628	-59.1		281	69.2	31	13,435	-56.6		294	48.2	29	13,420	-54.9		287	53.0
125	31	14,622	-58.0		294	46.4	31	14,829	-61.6		274	40.6	26	14,764	-61.1		282	64.1	31	14,592	-56.8		292	44.1	29	14,584	-55.8		287	48.8
100	31	16,024	-59.3		297	36.3	31	16,204	-63.8		276	33.8	25	16,150	-63.2		283	53.0	31	16,005	-57.4		290	36.3	27	16,009	-56.0		284	42.9
80	30	17,422	-59.1		292	32.8	30	17,570	-63.8		282	26.8	25	17,521	-63.0		286	34.0	30	17,416	-57.1		290	31.1	27	17,427	-56.4		284	36.3
60	28	19,228	-57.9		295	22.5	27	19,341	-61.6		290	13.8	22	19,306	-60.9		282	21.8	30	19,239	-56.3		293	23.9	26	19,258	-55.6		279	29.0
50	28	20,379	-57.4		288	17.5	27	20,475	-60.1		304	9.7	19	20,455	-58.4		280	12.0	30	20,399	-55.6		286	19.4	23	20,420	-54.7		278	25.3
40	28	21,797	-55.4		286	14.6	27	21,875	-57.8		328	6.8	18	21,865	-55.1		282	11.5	30	21,823	-54.2		287	18.3	23	21,853	-53.1		275	20.8
30	27	23,644	-52.7		281	15.5	26	23,705	-55.0		338	6.2	10	23,721	-52.7				30	23,677	-51.5		278	21.0	22	23,722	-50.1		264	24.1
25	26	24,829	-51.0		272	20.0	24	24,875	-53.6		330	6.6	5	24,939	-49.0				29	24,869	-49.6		273	20.4	22	24,917	-48.6		262	24.3
20	26	26,289	-48.8		265	23.7	19	26,332	-51.3		289	5.6							28	26,340	-47.6		268	25.1	20	26,383	-46.5		256	27.8
15	22	28,185	-46.4		268	27.2	11	28,225	-47.9		266	11.1							26	28,243	-45.4		259	29.7	16	28,303	-44.3		255	26.2
10	20	30,887	-43.4		262	37.5	5	30,926	-46.0										24	30,963	-41.8		261	34.6						
7	15	33,287	-41.8		261	43.1													17	33,447	-39.3		253	36.7						
5	8	35,570	-39.2																7	35,694	-37.8									

See reference note at end of table

RAWINSONDE DATA

Average monthly values

PITTSBURGH, PA.
(976 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	353	- 6.4	74	281	1.9
1,000	31	161				
950	31	566	- 5.6	68	274	3.1
900	31	987	- 7.7	70	278	7.8
850	31	1,430	- 9.6	68	282	11.9
800	31	1,897	-11.2	63	286	14.0
750	31	2,392	-13.1	58	285	15.9
700	31	2,915	-15.3	54	286	20.0
650	31	3,472	-17.6	50	283	21.6
600	31	4,070	-20.4	49	284	25.1
550	31	4,706	-23.9	48	280	28.4
500	31	5,401	-27.8	45	280	34.0
450	31	6,148	-32.6		277	39.1
400	31	6,973	-38.2		283	44.1
350	31	7,881	-44.0		272	48.4
300	31	8,903	-49.6		273	54.0
250	31	10,085	-53.2		275	59.5
200	31	11,520	-54.0		277	55.8
175	31	12,378	-53.6		277	53.8
150	31	13,369	-53.9		275	48.4
125	31	14,538	-54.8		275	46.8
100	30	15,963	-54.4		274	42.7
80	29	17,392	-55.1		272	33.6
60	29	19,232	-54.3		272	28.2
50	29	20,405	-53.0		271	23.5
40	27	21,848	-51.2		264	20.0
30	27	23,729	-48.9		260	20.6
25	26	24,934	-47.4		256	20.4
20	24	26,418	-45.7		258	24.1
15	23	28,340	-43.6		257	25.8
10	15	31,028	-42.3			
7	5	33,422	-43.4			
5						

POINT ARGUELLO, CALIF.
(1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	113	9.3	85	326	3.7
1,000	31	157	10.0	81	330	4.5
950	31	597	11.0	63	353	11.1
900	31	1,036	10.4	50	355	9.9
850	31	1,511	10.0	32	342	9.9
800	31	2,013	7.9	29	322	10.3
750	31	2,545	5.1	28	309	11.1
700	31	3,102	2.4		297	13.2
650	31	3,694	- 1.6		286	15.5
600	31	4,329	- 5.9		281	17.7
550	31	4,997	-10.2		279	22.3
500	31	5,733	-15.3		275	25.1
450	31	6,512	-21.0		273	28.6
400	31	7,380	-27.8	33	274	31.1
350	31	8,326	-35.2		276	32.8
300	31	9,381	-43.9		275	35.8
250	31	10,580	-53.8		275	38.7
200	31	11,984	-61.8		273	42.7
175	31	12,811	-61.3		270	47.2
150	31	13,768	-61.2		270	48.8
125	31	14,896	-63.2		270	46.4
100	31	16,261	-65.5		273	37.5
80	30	17,612	-65.4		275	31.7
60	26	19,370	-63.3		286	17.3
50	24	20,494	-60.9		313	11.9
40	23	21,888	-57.9		346	6.8
30	22	23,711	-54.6		352	4.7
25	22	24,883	-52.4		350	3.5
20	22	26,331	-50.6		328	2.9
15	21	28,215	-48.4		323	2.5
10	19	30,891	-46.3		245	6.4
7	17	33,262	-44.3		265	13.2
5	11	35,580	-43.6			

PORTLAND, ME.
(1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	20	- 5.7	79	312	4.3
1,000	30	121	- 4.4	65	326	7.0
950	30	524	- 5.4	60	341	11.5
900	30	947	- 7.3	65	334	10.1
850	30	1,391	- 9.3	63	322	9.9
800	30	1,858	-11.0	58	293	10.1
750	30	2,353	-13.4	56	286	11.3
700	30	2,875	-15.7	51	277	14.4
650	30	3,428	-18.5	48	275	17.7
600	30	4,025	-22.1	49	270	25.5
550	30	4,655	-26.0	50	269	22.9
500	30	5,344	-30.5	49	267	23.7
450	30	6,081	-35.5	47	269	27.8
400	30	6,897	-40.5		269	31.1
350	30	7,798	-45.0		270	35.2
300	30	8,818	-49.6		268	38.7
250	29	9,994	-52.7		268	45.9
200	29	11,436	-52.1		269	51.1
175	29	12,300	-52.3		269	47.4
150	29	13,299	-51.3		262	42.6
125	29	14,482	-51.3		265	38.1
100	29	15,932	-51.8		261	36.1
80	29	17,380	-51.9		259	31.5
60	28	19,246	-50.3		257	24.9
50	28	20,439	-49.5		254	24.9
40	27	21,908	-47.9		252	22.7
30	27	23,809	-47.0		252	26.0
25	27	25,021	-46.1		252	26.6
20	25	26,508	-44.6		254	29.0
15	22	28,437	-44.0		255	30.7
10	17	31,179	-41.6		260	42.2
7	8	33,590	-41.3			
5	5	35,864	-39.2			

RAPID CITY, S. DAK.
(905 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	966	- 6.0	84	348	5.6
1,000	31	173				
950	31	578				
900	31	1,005			13	4.7
850	31	1,458	- 2.7	61	318	12.2
800	31	1,939	- 3.2	58	324	14.8
750	31	2,446	- 5.3	57	316	17.1
700	31	2,988	- 8.3	54	312	20.0
650	31	3,553	-11.6	54	306	23.7
600	31	4,169	-15.5	57	302	27.6
550	31	4,818	-19.6	50	303	31.5
500	31	5,523	-24.5	44	300	35.4
450	31	6,278	-29.9	41	299	40.0
400	31	7,113	-36.0		297	44.3
350	31	8,026	-43.1		298	48.6
300	31	9,048	-50.7		297	52.8
250	31	1,0216	-57.5		296	53.8
200	31	11,614	-59.8		296	52.5
175	31	12,453	-57.9		296	50.1
150	31	13,427	-57.0		295	46.2
125	30	14,581	-56.9		297	42.2
100	30	15,992	-57.8		295	39.4
80	30	17,398	-57.8		295	33.4
60	30	19,217	-56.9		292	25.1
50	28	20,374	-56.5		301	18.8
40	27	21,792	-55.8		291	20.2
30	27	23,631	-54.3		290	20.4
25	25	24,806	-53.2		287	21.8
20	25	26,251	-51.3		282	23.9
15	18	28,128	-50.0		277	30.5
10	7	30,844	-46.8			
7						
5						

ST. CLOUD, MINN.
(984 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	316	-11.9	80	316	1.6
1,000	31	184				
950	31	586	- 9.2	71	1	2.9
900	31	999	- 9.5	65	321	3.5
850	31	1,440	- 9.9	56	316	6.0
800	31	1,907	-10.9	49	317	10.9
750	31	2,404	-12.1	40	314	14.6
700	31	2,927	-14.4	41	310	18.1
650	31	3,487	-17.1	45	316	22.0
600	31	4,083	-20.3	46	314	26.8
550	31	4,722	-24.2	48	312	29.7
500	31	5,412	-28.5	48	309	34.2
450	31	6,156	-33.5	47	309	39.1
400	31	6,978	-39.1		305	45.7
350	31	7,882	-44.9		303	47.0
300	31	8,897	-51.8		299	49.4
250	31	10,063	-56.8		297	50.3
200	31	11,475	-56.8		297	50.9
175	31	12,325	-55.1		298	47.6
150	31	13,312	-54.4		297	44.5
125	31	14,480	-54.7		295	42.6
100	31	15,906	-55.1		296	37.9
80	31	17,329	-55.3		295	34.8
60	30	19,170	-54.5		290	27.2
50	29	20,339	-53.9		288	26.0
40	28	21,769	-53.6		281	27.2
30	27	23,623	-52.2		271	26.0
25	27	24,805	-51.0		266	30.9
20	24	26,245	-49.8		266	41.2
15	20	28,119	-47.7		260	55.8
10	9	30,964	-41.1			
7						
5						

ST. PAUL IS., ALASKA
(1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	- 3.8	82	40	6.0
1,000	31	136			82	7.6
950	31	537	- 6.4	71	88	7.6
900	31	960	- 8.3	66	93	7.6
850	31	1,403	- 8.6	50	88	4.7
800	31	1,873	- 9.5	34	75	4.1
750	31	2,368	-11.7		66	5.1
700	31	2,895	-14.6		64	6.4
650	31	3,451	-17.9		39	5.8
600	31	4,048	-21.4		17	7.8
550	31	4,681	-25.0		347	7.4
500	31	5,372	-29.4		353	7.4
450	31	6,111	-34.7		342	7.6
400	31	6,930	-40.5		326	9.5
350	31	7,829	-46.1		326	5.2
300	31	8,840	-52.2		266	2.1
250	31	10,008	-56.4		328	3.5
200	31	11,425	-55.2		291	8.7
175	31	12,282	-52.9		276	10.9
150	31	13,280	-51.7		275	10.9
125	30	14,470	-51.1		263	10.7
100	30	15,922	-51.1		258	9.9
80	30	17,375	-50.5		270	7.8
60	29	19,249	-50.0		270	8.4
50	26	20,438	-50.0		254	8.5
40	23	21,924	-49.7		266	10.5
30	23	13,810	-49.3		274	11.5
25	20	24,995	-48.2		288	14.6
20	17	26,503	-48.0			
15	11	28,466	-46.2			
10						
7						
5						

SALT LAKE CITY, UTAH
(872 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,288	2.3	74	154	3.7
1,000	31	171				
950	31	592				
900	31	1,033				
850	31	1,502	4.7	54	169	4.1
800	31	1,994	2.4	51	234	4.7
750	31	2,514	- .9	54	266	8.0
700	31	3,060	- 4.7	57	283	11.9
650	31	3,636	- 8.8	56	286	15.9
600	31	4,256	-12.7	49	290	21.0
550	31	4,913	-17.2	49	287	26.0
500	31	5,625	-21.6	44	287	30.1
450	31	6,389	-26.9	41	289	32.1
400	31	7,235	-32.8	41	289	36.9
350	31	8,162	-39.6		289	41.8
300	31	9,199	-47.4		290	44.5
250	31	10,382	-55.8		291	49.0
200	31	11,783	-60.8		288	42.0
175	31	12,616	-59.4		288	40.6
150	31	13,585	-58.4		291	36.1
125	29	14,731	-59.9		292	33.0
100	29	16,121	-61.0		292	29.5
80	28	17,510	-60.9		296	23.1
60	26	19,303	-59.2		294	15.9
50	24	20,450	-58.6		304	9.5
40	23	21,863	-56.6		316	10.3
30	22	23,702	-53.9		305	9.7
25	21	24,868	-52.4		298	12.2
20	21	26,317	-50.4		285	13.0
15	19	28,211	-48.8		282	15.7
10	12	30,854	-47.1			
7						
5						

SALEM, OREG.
(1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	4.0	90	184	2.9
1,000	31	148	5.4	82	195	3.3
950	31	565	5.2	78	206	6.0
900	31	1,008	4.1	68	225	11.5
850	31	1,471	2.0	67	235	15.5
800	31	1,958	- .7	66	235	18.5
750	31	2,469	- 3.4	62	238	22.0
700	30	3,017	- 6.5	59	244	23.3
650	30	3,584	-10.2	51	247	25.6
600	30	4,204	-14.2	46	253	25.8
550	30	4,857	-18.2	43	258	28.2
500	29	5,570	-22.7	40	261	33.0
450	29	6,331	-27.8	38	264	37.7
400	29	7,171	-34.1	40	269	41.0
350	29	8,093	-41.0		267	43.3
300	29	9,124	-48.6		266	45.3
250	29	10,302	-56.1		267	47.4
200	29	11,705	-59.4		270	44.9
175	29	12,544	-58.0		269	41.2
150	28	13,521	-56.7		270	36.7
125	28	14,674	-58.0		273	34.8
100	28	16,076	-58.7		273	33.2
80	27	17,479	-58.5		275	24.1
60	26	19,300	-56.9		285	17.5
50	25	20,454	-57.2		289	12.6
40	23	21,878	-55.4		298	10.7
30	22	23,716	-54.1		308	11.9
25	20	24,888	-53.3		302	12.2
20	18	26,340	-52.0		301	13.6
15	16	28,224	-49.8		287	19.4
10	11	30,890	-48.4		307	18.7
7	5	33,261	-46.7			
5						

SAN ANTONIO, TEX.
(990 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	243	8.9	85	19	4.3
1,000	31	157				
950	31	581	9.6	75	100	4.9
900	31	1,033	10.3	67	182	9.7
850	31	1,510	9.9	57	211	11.1
800	31	2,012	8.1	52	248	11.3
750	31	2,542	6.3	42	272	15.2
700	31	3,107	3.3	38	284	20.0
650	31	3,701	- .2	33	283	24.9
600	31	4,341	- 4.5	32	282	28.8
550	31	5,014	- 9.3	33	280	33.8
500	31	5,751	-14.6		280	36.1
450	31	6,534	-20.5		275	40.4
400	31	7,402	-27.2		278	42.2
350	31	8,350	-34.3		285	50.5
300	31	9,411	-42.4		293	54.4
250	31	10,620	-51.0		287	60.0
200	31	12,047	-57.9			
175	29	12,878	-59.2			
150	29	13,838	-61.8			
125	25	14,947	-65.1			
100	21	16,307	-68.7			
80	17	17,637	-69.6			
60	15	19,360	-66.1			
50	15	20,479	-60.2			
40	15	21,885	-55.9			
30	15	23,731	-52.0			
25	15	24,918	-49.5			
20	13	26,391	-46.0			
15	11	28,325	-42.4			
10	7	31,090	-38.4			
7						
5						

SAN DIEGO, CALIF.
(1002 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	124	10.4	91	47	0.6
1,000	31	140	10.7	89		.0
950	31	567	12.1	68	238	.8
900	31	1,024	11.8	48	303	3.3
850	31	1,502	11.2	37	296	7.6
800	31	2,007	9.2	31	299	8.9
750	31	2,536	6.4	31	294	11.9
700	31	3,102	3.1	30	289	14.0
650	31	3,694	- .5	27	284	17.1
600	31	4,336	- 4.7		286	19.4
550	31	5,008	- 9.4		284	20.6
500	31	5,747	-14.5	27	280	25.5
450	31	6,526	-20.6		276	25.8
400	31	7,399	-27.3		282	25.5
350	31	8,347	-34.5		280	29.0
300	31	9,406	-43.2		281	30.5
250	31	10,609	-52.4		281	34.6
200	31	12,025	-60.0		275	44.9
175	31	12,857	-60.6		270	51.9
150	31	13,814	-61.8		271	53.0
125	31	14,939	-63.3		272	49.4
100	26	16,291	-65.8		274	38.9
80	26	17,641	-66.7		276	33.0
60	25	19,390	-64.3		281	21.0
50	25	20,508	-62.2		294	12.4
40	25	21,898	-58.5		312	7.0
30	23	23,720	-54.6		319	4.1
25	23	24,892	-52.7		281	2.7
20	22	26,339	-50.8		307	6.4
15	20	28,232	-48.2		293	4.5
10	17	30,915	-45.7		265	9.5
7	8	33,291	-44.6			
5	6	35,575	-43.0			

SAN JUAN, P. R.
(1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	22.4	83	111	2.1
1,000	31	144	23.4	75	103	8.5
950	31	594	20.4	75	90	13.0
900	31	1,057	17.3	74	90	12.6
850	31	1,543	14.3	69	89	12.0
800	31	2,054	11.9	60	83	11.3
750	31	2,595	9.6	46	90	7.8
700	31	3,163	7.3	31	82	4.7
650	31	3,768	4.4	28	129	1.4
600	31	4,417	1.2		230	2.5
550	31	5,109	- 2.2		256	6.4
500	31	5,864	- 6.8		268	11.9
450	31	6,675	-12.3		266	16.3
400	31	7,569	-18.7		264	21.8
350	31	8,549	-25.9		264	27.0
300	31	9,646	-34.5		264	32.3
250	31	10,893	-44.4		263	40.0
200	31	12,351	-55.6		265	44.7
175	31	13,190	-61.7		265	46.8
150	30	14,131	-68.0		261	37.3
125	29	15,214	-73.2		263	33.2
100	28	16,506	-78.2		266	20.6
80	27	17,775	-78.8		264	10.3
60	27	19,440	-71.0		246	3.9
50	27	20,536	-64.4		336	1.2
40	22	21,908	-59.0		26	5.6
30	19	23,745	-52.7		74	14.4
25	14	24,925	-50.7			
20	9	26,381	-48.2			
15	5	28,239	-45.2			
10						

SANTA MONICA, CALIF.
(1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	12.1	82	5	2.7
1,000	31	144	12.5	76	23	2.1
950	31	576	12.3	57	12	2.1
900	31	1,027	11.6	48	316	2.7
850	31	1,505	10.7	33	304	6.2
800	31	2,008	8.2	27	290	8.4
750	31	2,536	5.4	26	291	10.9
700	31	3,099	2.3		285	12.4
650	31	3,688	- 1.3		287	16.3
600	31	4,328	- 5.5		286	17.7
550	31	4,998	-10.2		283	22.0
500	31	5,734	-15.5		281	24.5
450	31	6,512	-21.4	30	277	27.0
400	31	7,381	-28.0		279	27.6
350	31	8,327	-35.4		281	27.8
300	31	9,380	-43.9		282	29.9
250	31	10,578	-53.6		283	32.6
200	31	11,982	-61.3		280	38.9
175	31	12,811	-61.3		273	44.9
150	31	13,766	-61.8		273	47.4
125	31	14,889	-63.7		271	43.7
100	29	16,248	-66.1		277	37.1
80	26	17,594	-66.4		278	28.4
60	24	19,341	-64.0		288	19.4
50	24	20,463	-62.0		303	12.2
40	23	21,855	-58.9		323	6.8
30	22	23,673	-55.4		322	5.1
25	21	24,843	-53.2		308	3.1
20	21	26,287	-50.9		315	3.7
15	20	28,170	-48.6		257	3.3
10	16	30,849	-46.8		232	9.1

SAULT STE. MARIE, MICH.
(993 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	221	-11.6	77	41	2.9
1,000	30	166			43	2.1
950	30	561	- 9.8	65	64	5.1
900	30	977	-10.6	65	22	4.3
850	30	1,415	-12.2	64	343	6.8
800	30	1,876	-13.9	60	335	8.5
750	30	2,361	-16.0	54	325	9.9
700	28	2,881	-17.8	48	311	11.3
650	28	3,431	-20.4	47	307	13.4
600	28	4,022	-23.8	48	307	14.8
550	28	4,649	-27.6	48	305	18.1
500	28	5,334	-31.9	47	304	18.8
450	28	6,069	-36.8		301	21.0
400	28	6,879	-42.2		299	23.9
350	28	7,772	-48.0		297	27.2
300	28	8,775	-54.1		294	30.9
250	28	9,934	-57.5		291	36.5
200	27	11,334	-55.4		289	37.7
175	26	12,190	-54.3		290	37.5
150	25	13,169	-53.5		285	35.4
125	25	14,342	-53.5		284	33.2
100	24	15,776	-54.2		286	30.9
80	24	17,207	-53.6		283	30.5
60	24	19,056	-53.4		279	27.0
50	24	20,229	-53.3		275	24.1
40	24	21,669	-52.3		271	25.3
30	22	23,521	-51.3		267	30.5
25	20	24,705	-49.8		265	35.6
20	19	26,170	-47.6		265	44.1
15	15	28,081	-45.1		264	53.0
10	8	30,779	-42.2			

SEATTLE, WASH
(1002 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	125	4.1	86	139	3.1
1,000	31	137			100	2.7
950	31	552	4.0	74	183	8.5
900	31	994	2.3	68	206	9.9
850	31	1,453	.0	63	223	12.0
800	31	1,937	- 2.4	56	235	14.6
750	31	2,444	- 5.5	52	241	17.9
700	31	2,984	- 8.4	48	248	20.2
650	31	3,552	-11.9	45	249	25.5
600	31	4,164	-15.8	46	251	29.0
550	31	4,810	-20.2	44	252	30.5
500	31	5,514	-25.0	40	257	32.1
450	31	6,262	-28.8	41	257	36.3
400	31	7,100	-36.2	43	260	41.0
350	31	8,014	-42.5		261	46.6
300	31	9,040	-49.4		265	50.9
250	31	10,218	-55.5		268	50.9
200	31	11,629	-57.8		271	46.2
175	30	12,479	-56.3		270	41.6
150	28	13,454	-55.8		269	39.2
125	28	14,613	-56.5		271	36.3
100	28	16,029	-56.7		274	31.3
80	27	17,443	-56.8		279	26.0
60	26	19,275	-55.6		285	20.6
50	26	20,439	-55.5		291	17.1
40	25	21,867	-55.1		304	16.5
30	25	23,709	-54.7		311	17.5
25	25	24,879	-53.8		317	18.7
20	23	26,322	-53.7		316	19.8
15	13	28,165	-52.3		328	26.6
10	5	30,832	-51.0			

SHEMYA, ALASKA
(1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	26	37	0.9	83	105	6.8
1,000	26	86			125	2.5
950	26	489	- 2.4	87	165	6.4
900	26	923	- 5.2	86	181	8.5
850	26	1,371	- 6.5	69	200	6.0
800	26	1,844	- 8.2	55	214	6.1
750	26	2,340	-10.6	52	151	2.1
700	26	2,872	-13.2	47	157	1.9
650	26	3,426	-16.1		161	6.4
600	26	4,032	-19.8		164	7.8
550	26	4,667	-24.1		217	7.2
500	26	5,362	-28.7		230	6.0
450	26	6,104	-34.2		188	3.9
400	26	6,925	-40.2		278	18.8
350	26	7,821	-46.7			
300	26	8,829	-53.2			
250	26	9,992	-57.0			
200	25	11,407	-54.5			
175	25	12,267	-52.4			
150	25	13,267	-51.5			
125	23	14,449	-51.7			
100	20	15,900	-51.0			
80	20	17,355	-50.7			
60	20	19,236	-49.6			
50	20	20,433	-49.1			
40	20	21,899	-49.1			
30	20	23,792	-48.3			
25	18	24,997	-47.5			
20	17	26,457	-47.1			
15	15	28,387	-45.6			
10	10	31,037	-43.9			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MARCH 1960

Standard pressure surface (mb.)	SHREVEPORT, LA. (1011 MB.)						SPOKANE, WASH. (932 MB.)						SWAN ISLAND, W. I. (1014 MB.)						TAMPA, FLA. (1019 MB.)						TATOOSH IS., WASH. (1011 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	76	4.9	78	44	3.1	31	722	0.5	76	167	3.9	30	10	25.1	78	65	6.6	31	8	12.4	86	36	2.1	28	31	5.8	86	139	4.1
1,000	31	170	4.5	72	49	3.9	31	147					30	130			69	8.9	31	165	14.1	71	50	3.5	28	121			157	4.1
950	31	589	4.6	64	48	1.0	31	564					30	582	19.9	80	83	12.6	31	594	12.6	65	213	3.7	28	538	4.2	77	204	9.7
900	31	1,030	5.4	59	286	7.8	31	999	2.4	65	194	7.2	30	1,042	16.6	76	99	11.7	31	1,051	10.8	56	268	8.7	28	979	1.9	73	215	12.8
850	31	1,497	4.8	55	288	12.8	31	1,460	.8	58	230	12.2	30	1,528	13.7	70	98	8.9	31	1,526	8.9	50	262	14.2	28	1,439	-.2	68	227	15.3
800	31	1,990	3.1	48	280	18.5	31	1,945	-1.6	56	244	15.2	30	2,038	11.7	57	101	5.6	31	2,027	6.4	49	259	18.8	28	1,922	-2.8	64	237	16.5
750	31	2,508	1.1	45	283	24.5	31	2,454	-4.9	56	254	18.1	29	2,582	9.8	41	91	3.1	31	2,556	4.3	45	265	22.3	28	2,428	-5.4	58	236	19.6
700	31	3,064	-1.6	40	285	28.6	31	2,995	-8.5	58	258	20.6	29	3,148	7.5	30	46	1.9	31	3,116	1.6	40	271	26.6	28	2,970	-8.5	55	242	21.6
650	31	3,646	-4.9	39	284	30.9	31	3,563	-12.0	54	260	23.7	29	3,752	4.4		322	1.6	31	3,710	-1.7	35	270	29.3	28	3,536	-12.1	48	247	24.7
600	31	4,276	-8.6	39	283	33.6	31	4,175	-15.9	53	260	28.2	29	4,404	.9		289	3.5	31	4,344	-5.6	33	273	32.6	28	4,149	-16.0	47	243	26.6
550	31	4,941	-13.0		281	38.3	31	4,820	-20.2	49	261	30.3	29	5,093	-3.1		268	6.6	31	5,019	-9.9	33	274	38.3	28	4,790	-20.2	46	243	31.1
500	31	5,664	-17.9		281	41.2	31	5,524	-25.0	46	264	32.3	29	5,847	-7.9		268	10.3	30	5,752	-14.4		279	43.3	28	5,498	-25.3	48	247	33.0
450	31	6,439	-23.4	36	282	44.3	31	6,272	-30.6	47	266	36.1	29	6,659	-13.4		278	15.5	30	6,541	-19.8		278	49.7	27	6,241	-30.8	49	244	38.5
400	31	7,296	-29.8		280	49.0	31	7,109	-36.1		270	42.6	29	7,546	-20.0		274	18.8	30	7,411	-26.1		278	55.8	27	7,082	-36.4		244	41.8
350	31	8,235	-36.8		278	54.8	31	8,024	-42.7		272	46.0	29	8,523	-27.4		268	26.0	30	8,364	-33.1		270	47.6	27	7,996	-42.7		249	49.2
300	31	9,285	-44.4		279	62.6	31	9,048	-49.8		274	51.1	29	9,615	-35.6		269	36.1	30	9,431	-41.2				27	9,021	-49.4		250	51.9
250	31	10,485	-52.6		278	72.1	31	10,223	-56.4		277	52.1	28	10,858	-45.2		258	46.4	30	10,648	-50.0				27	10,198	-55.6		247	53.4
200	31	11,904	-58.5		276	82.2	31	11,628	-58.3		279	50.5	27	12,315	-55.9		249	50.5	28	12,090	-56.5				27	11,612	-57.4		253	47.4
175	30	12,737	-59.3		281	76.4	31	12,471	-56.9		281	45.3	26	13,153	-61.5		253	48.8	25	12,926	-59.8				26	12,447	-56.0		258	43.9
150	30	13,701	-60.0		280	74.6	31	13,451	-55.9		279	42.6	26	14,096	-67.2		257	44.1	25	13,884	-62.8				26	13,429	-55.6		258	39.6
125	30	14,834	-62.2		283	62.4	31	14,610	-56.2		286	37.3	23	15,182	-72.9		263	35.8	22	14,999	-65.9				25	14,592	-55.6		261	36.7
100	28	16,211	-65.2		282	53.4	31	16,025	-56.9		281	31.9	22	16,479	-76.7		268	23.3	22	16,341	-69.1				25	16,012	-56.3		262	26.4
80	25	17,568	-65.6		278	36.5	29	17,435	-56.7		287	27.6	20	17,752	-78.4		260	12.6	21	17,670	-69.9				23	17,424	-56.2		269	26.0
60	25	19,325	-62.7		279	24.1	27	19,258	-55.6		289	24.3	19	19,407	-72.4		266	11.3	21	19,402	-64.4				22	19,262	-55.0		281	17.1
50	25	20,459	-59.1		283	19.4	26	20,406	-55.5		296	20.8	17	20,492	-66.4		270	8.0	19	20,521	-60.4				20	20,427	-54.7		289	15.5
40	24	21,874	-55.0		286	10.9	23	21,842	-55.3		310	18.1	15	21,862	-60.5		288	2.7	17	21,919	-57.1				19	21,853	-54.7		303	13.2
30	24	23,726	-51.6		290	4.5	18	23,675	-54.3		307	18.3	15	23,680	-54.2		61	4.5	14	23,778	-51.6				18	23,697	-53.8		313	16.1
25	24	24,914	-49.7		110	1.7	17	24,840	-54.0		306	20.0	14	24,854	-52.4		74	9.5	13	24,966	-49.2				16	24,865	-53.4		318	15.7
20	24	26,383	-46.5		120	4.5	11	26,295	-52.5		291	26.8	12	26,316	-50.2		96	12.2	11	26,439	-45.9				15	26,293	-53.1		312	21.6
15	23	28,303	-43.4		129	6.6	9	28,166	-51.2				8	28,186	-46.5				10	28,361	-41.9				12	28,149	-51.7			
10	18	31,050	-39.8		222	16.3	7	30,838	-48.5				5	30,902	-42.3															
7	7	33,508	-37.4																											

Standard pressure surface (mb.)	TOPEKA, KANS. (989 MB.)						TUCSON, ARIZ. (925 MB.)						WASHINGTON, D. C. (1008 MB.)						WINNEMUCCA, NEV. (870 MB.)						YAKUTAT, ALASKA (1006 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	269	-4.9	80	28	1.0	31	781	9.4	51	151	5.6	31	88	-1.8	67	320	3.3	31	1,310	1.1	69	195	1.6	31	12	-2.4	77	95	7.2
1,000	31	178					31	131					31	151			334	4.1	31	177					31	59			77	6.6
950	31	584	-4.1	72	47	1.6	31	560					31	558	-3.7	61	321	8.0	31	596					31	470	-1.4	59	91	11.1
900	31	1,011	-3.1	60	294	4.1	31	1,018	15.4	33	168	2.9	31	984	-5.5	56	312	10.1	31	1,039					31	898	-4.1	60	93	9.7
850	31	1,463	-2.8	55	289	9.3	31	1,500	13.3	30	273	1.9	31	1,431	-7.3	52	300	12.2	31	1,504	5.6	49	151	2.3	31	1,347	-6.8	61	98	8.9
800	31	1,943	-3.7	54	304	13.6	31	2,006	10.0	30	266	6.0	31	1,902	-9.0	47	280	16.1	31	1,998	3.3	44	237	8.2	31	1,818	-9.7	62	93	6.0
750	31	2,450	-5.2	52	312	16.1	31	2,532	6.5	30	268	9.9	31	2,400	-10.7	45	276	20.6	31	2,513	-.5	47	253	11.7	31	2,314	-12.9	60	116	5.8
700	31	2,991	-7.8	55	307	20.6	31	3,102	3.1	26	273	14.6	31	2,930	-12.7	47	271	24.5	31	3,066	-4.2	45	266	16.3	31	2,837	-16.5	57	111	6.8
650	31	3,559	-10.8	58	306	26.4	31	3,691	-.5		276	18.3	31	3,495	-15.5	49	272	29.1	31	3,639	-7.8	40	272	19.8	31	3,385	-20.3	57	119	9.1
600	31	4,176	-14.0	53	303	32.6	31	4,334	-4.6		279	22.0	31	4,093	-18.2	49	276	33.6	31	4,264	-11.8	42	277	22.0	31	3,979	-24.3	56	142	10.7
550	31	4,827	-17.7	46	303	36.7	31	5,001	-9.2		282	25.1	31	4,738	-21.9	46	275	37.1	31	4,916	-15.6	41	277	23.7	31	4,603	-28.7	54	142	9.7
500	31	5,539	-22.3	41	302	40.4	31	5,744	-14.5		283	28.0	31	5,434	-26.1	43	275	43.7	31	5,638	-20.4	40	282	26.6	31	5,284	-33.7	50	158	10.1
450	31	6,295	-27.8	37	299	45.3	31	6,522	-20.5		285	30.9	31	6,184	-31.1	40	276	48.8	31	6,398	-25.7	40	281	27.4	31	6,009	-38.9		164	8.4
400	31	7,140	-33.9		298	50.1	31	7,396	-27.4		285	33.4	31	7,014	-36.8		273	55.2	31	7,253	-32.1	43	272	26.6	31	6,816	-44.4		158	15.0
350	31	8,061	-41.2		296	54.0	31	8,343	-34.7		283	38.7	31	7,927	-42.5		273	58.7	31	8,181	-39.4		272	28.0	31	7,701	-49.7		158	15.2
300	31	9,091	-49.1		298	62.0	31	9,400	-43.1		279	43.3	31	8,955	-48.5		272	59.5	31	9,218	-47.4		275	28.4	31	8,701	-53.1		153	11.7
250	30	10,271	-55.8		295	65.5	31	10,603	-52.3		275	53.6	31	10,141	-53.5		272	65.9	31	10,402	-55.7		264	27.6	31	9,876	-53.1		213	5.8
200	30	11,679	-58.7		293	64.3	31	12,020	-59.0		275	64.1	31	11,571	-54.5		272	64.3	31	11,801	-60.9		269	26.8	31	11,320	-51.4			
175	30	12,519	-58.0		293	61.4	31	12,856	-59.7		274	63.5	31	12,428	-53.8		273	58.1	29	12,634	-60.9		271	27.6	31	12,189	-50.6			
150	30	13,492	-57.3		292	55.4	31	13,817	-61.0		272	57.7	31	13,418	-54.3		269	54.8	27	13,602	-58.8		276	22.0	30	13,189	-50.5			
125	30	14,645	-57.7		291	50.7	30	14,938	-63.6		275	59.5	30	14,582	-55.3		271	52.8	27	14,745	-59.8		279	19.8	28	14,386	-49.9			
100	29	16,050	-58.6		288	42.0	29	16,298	-67.1		276	44.9	29	16,002	-56.2		271	41.6	22	16,138	-61.5		287	18.3	28	15,845	-50.2			
80	29	17,450	-59.1		287	34.0	28	17,646	-67.8		281	36.5	29	17,419	-55.9		271	31.1	22	17,521	-61.3		287	11.7	28	17,299	-50.6			
60	27	19,260	-58.0		289	23.9	25	19,380	-65.4		288	21.4	28	19,256	-54.1		269	20.6	19	19,321	-59.6		344	6.4	27	19,169	-50.9			
50	27	20,413	-56.6		288	16.7	24	20,501	-62.6		299	12.8	28	20,426	-52.8		261	15.2	16	20,468	-58.9				27	20,354	-51.5			
40	27	21,835	-54.1		290	16.5	24	21,891	-58.5		290	7.0	28	21,875	-50.3		261	11.5	14	21,879	-57.3				27	21,800	-52.2			
30	27	23,693	-51.6		280	15.7	22	23,724	-55.1		297	6.8	27	23,762	-48.0		244	10.1	13	23,701	-56.0				25	23,685	-53.2			
25	27	24,881	-49.7		268	16.1	19	24,894	-53.1		307	5.8	24	24,965	-46.5		245	11.9	12	24,876	-54.9				24	24,861	-54.0			
20	25	26,347	-47.4		264	18.8	19	26,340	-50.7		294	2.9	22	26,444	-45.0		237	12.4	11	26,308	-53.0				20	26,272	-55.3			
15	25	28,264	-44.6		264	24.3	14	28,242	-47.6		96	9.9	20	28,373	-43.4		240	14.0	10	28,170	-51.5				18	28,117	-54.9			
10	21	30,990	-41.6		263	31.9	14	30,932	-45.5				10	31,086	-40.5				7	30,881	-47.7				6	30,533	-58.6			
7	15	33,437	-39.0		257	36.5																								
5	6	35,655	-36.4																											

Standard pressure surface (mb.)	YUCCA FLAT, NEV. (882 MB.)					
					Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	1,196	2.5	64	321	2.5
1,000	31	162				
950	31	583				
900	31	1,029				
850	31	1,500	8.6	36	340	4.1
800	31	1,999	6.2	34	257	3.9
750	31	2,522	3.2	33	254	5.8
700	31	3,081	.1	30	274	9.5
650	31	3,667	-3.7	30	279	12.6
600	31	4,299	-7.6	32	291	18.5
550	31	4,964	-11.7		292	24.7
500	31	5,695	-16.4		289	29.0
450	31	6,472	-22.4		286	34.2
400	31	7,334	-28.8		285	38.1
350	31	8,275	-36.2		285	41.4
300	31	9,326	-44.8		285	46.2
250	31	10,521	-54.1		283	48.2
200	31	11,923	-62.2		279	48.8
175	31	12,749	-61.7		277	52.1
150	31	13,707	-60.4		278	50.9
125	31	14,842	-61.7		279	44.1
100	29	16,217	-63.3		278	35.4
80	26	17,583	-63.4		284	27.6
60	25	19,355	-62.2		296	14.6
50	25	20,490	-59.3		317	8.7
40	25	21,894	-57.1		323	5.8
30	23	23,725	-54.0		322	5.2
25	21	24,899	-52.7		301	9.7
20	19	26,343	-50.1		293	9.9
15	16	28,248	-48.1		251	5.4
10	14	30,922	-46.0		280	11.7
7	6	33,317	-43.6			

See reference note at end of table

Note: All observations scheduled at 1200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant wind speed is biased toward a lower value as the number of observations on which the resultant is based lessens. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	TUCSON, ARIZ.								
	Air mass								
	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Mar.									
3-----	1.05	1.13	1.25	1.36	1.49	----	----	----	----
6-----	H 1.01	H 1.09	H 1.20	H 1.34	----	----	----	----	----
16----	H .91	H 1.00	H 1.12	H 1.28	H 1.43	----	----	----	----
19----	.98	1.09	1.17	1.33	1.49	1.32	H 1.16	H 1.01	H 0.89
20----	.97	1.07	1.19	1.34	1.48	H 1.26	----	----	----
21----	H .91	H 1.03	H 1.14	H 1.28	H 1.39	----	----	----	----
29----	----	----	----	H 1.28	H 1.40	H 1.20	H 1.02	H .88	H .78
Averages	0.97	1.07	1.18	1.31	1.45	1.26	1.09	0.94	0.84
	OMAHA, NEBR.								
	Air mass								
	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Mar.									
3-----	----	I 0.68	I 0.81	I 1.11	----	----	----	----	----
4-----	0.76	M .85	M .99	M 1.23	M 1.28	----	----	----	----
13----	----	----	----	----	H .84	----	----	----	----
Averages	0.76	0.77	0.90	1.17	1.06	----	----	----	----
	MAUNA LOA OBS., HAWAII								
	Air mass								
	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Mar.									
1-----	1.27	1.35	1.45	1.56	1.66	----	----	----	1.23
2-----	1.23	1.32	1.42	1.53	----	----	----	----	----
7-----	1.26	1.35	1.44	1.55	1.66	----	----	----	----
9-----	1.25	1.34	1.43	1.54	----	----	----	----	----
10----	1.26	1.34	1.43	1.54	----	----	----	----	----
11----	----	----	----	----	----	1.52	1.41	1.31	----
12----	1.37	1.45	1.53	1.64	1.74	1.61	1.50	1.41	1.32
13----	----	----	----	----	1.62	1.57	1.47	1.37	1.29
14----	1.31	1.38	1.48	1.59	1.70	1.56	1.46	1.37	1.29
15----	1.33	1.40	1.50	1.61	----	----	----	----	----
17----	1.18	1.28	1.39	1.52	----	----	----	----	----
19----	1.28	1.36	1.46	1.57	1.69	----	1.42	----	1.26
20----	1.27	1.35	1.44	1.56	1.68	----	----	1.32	1.22
21----	1.23	1.31	1.41	1.53	1.66	1.52	1.40	1.30	1.22
22----	1.25	1.34	1.43	1.54	----	----	----	----	----
24----	1.25	1.35	1.45	1.56	----	----	----	----	----
26----	1.30	1.37	1.47	1.57	----	----	----	----	----
27----	1.26	1.35	1.45	1.50	----	----	----	----	----
28----	1.30	1.38	1.46	1.56	----	----	----	----	----
30----	1.26	1.33	1.41	1.49	----	----	----	----	----
31----	1.24	1.33	1.43	1.54	----	----	----	----	----
Averages	1.27	1.35	1.45	1.55	1.68	1.56	1.44	1.35	1.26

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	MADISON, WIS.								
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Mar.									
1-----	M 0.91	M 1.02	M 1.14	----	----	----	----	----	----
5-----	S .84	S 1.01	S 1.15	S 1.34	----	S 1.37	1.23	----	----
8-----	----	S 1.02	S 1.17	S 1.37	----	----	----	----	----
12----	M .83	M .94	M 1.08	M 1.27	S 1.42	S 1.33	----	----	----
13----	M .70	M .78	M .94	M 1.14	----	----	----	----	----
22----	----	----	----	S 1.52	M 1.50	S 1.37	S 1.12	S 1.04	S 0.96
Averages	0.82	0.95	1.10	1.33	1.46	1.36	1.18	1.04	0.96
	GUAM, M. I.								
	Air mass								
	4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
Mar.									
14----	----	----	----	M 1.25	----	----	----	----	----
25----	----	S 0.86	----	M 1.20	----	----	----	----	----
Averages	----	0.86	----	1.23	----	----	----	----	----
	ALBUQUERQUE, N. MEX. †								
	Air mass								
	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Mar.									
2-----	----	----	----	----	1.37	----	----	----	----
3-----	0.94	0.99	1.03	----	----	----	----	----	----
4-----	.89	.97	1.04	1.19	1.31	----	----	----	0.84
6-----	.95	1.03	1.15	1.26	1.31	----	----	----	----
7-----	.98	1.05	1.14	1.23	1.31	----	----	----	----
8-----	.92	.99	1.08	----	----	1.01	0.93	0.83	.67
9-----	----	.95	----	----	1.25	1.13	1.05	.95	.85
10----	----	----	----	1.29	1.40	1.24	----	----	----
11----	.96	1.05	1.15	1.22	----	----	----	----	----
12----	----	----	----	----	----	----	----	----	.96
14----	.89	.97	1.07	1.17	----	----	----	----	----
15----	.77	.88	.97	1.09	----	1.08	.82	----	----
17----	----	.84	----	1.17	1.27	1.17	1.03	.96	.87
18----	.89	.99	1.07	1.16	1.27	1.16	1.01	.94	.87
19----	.87	.96	1.05	1.15	1.27	1.15	1.03	.94	.87
20----	.88	.96	1.04	1.19	1.19	1.12	1.02	.92	.85
21----	.81	.86	.95	1.04	1.15	1.05	.88	----	.66
22----	.81	.90	.98	1.10	1.17	1.06	.99	.89	.78
25----	.81	.93	1.01	1.16	1.26	1.12	.98	.87	.82
26----	.84	.92	1.03	1.15	1.27	1.11	.99	.89	.83
27----	.82	.87	1.97	1.09	----	----	----	----	----
29----	----	----	----	.98	1.26	1.05	.87	.74	.65
30----	.84	.93	1.01	1.07	1.25	1.09	.96	.85	.75
Averages	0.87	0.96	1.04	1.15	1.27	1.11	0.97	0.90	0.81

* Values corresponding to true solar noon.
† Data should be considered doubtful due to moisture in instrument.
H Haze.
I Intense haze - indeterminable.
M Moderate haze - indeterminable.
S Slight haze - indeterminable.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Albuquerque, N.Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville Tex
Mar. 4-----	529	465	314	601	145	352	99	253	441	109	120	132	225
Mar. 5-----	---	438	128	540	123	467	122	---	428	209	97	206	124
Mar. 6-----	---	263	41	598	229	---	214	197	387	328	197	346	263
Mar. 7-----	559	334	79	370	289	---	202	266	270	449	90	415	352
Mar. 8-----	557	157	216	607	103	---	220	285	213	302	319	263	460
Mar. 9-----	569	231	144	388	274	---	232	292	435	475	270	477	498
Mar. 10-----	583	280	101	380	245	---	146	278	370	431	471	448	507
Average-------	560	310	146	498	201	---	176	262	363	329	223	327	347
Mar. 11-----	542	414	155	114	417	---	244	303	505	488	231	489	53
Mar. 12-----	---	367	209	498	175	---	134	303	491	465	191	457	64
Mar. 13-----	---	415	264	477	153	---	151	315	498	325	169	266	83
Mar. 14-----	506	343	92	464	119	---	201	330	273	295	321	293	175
Mar. 15-----	628	293	215	59	361	---	273	---	390	382	127	363	360
Mar. 16-----	362	260	55	419	136	---	279	356	463	445	512	448	454
Mar. 17-----	---	498	82	198	313	---	250	326	460	89	505	51	280
Average-------	510	370	153	319	239	---	219	322	440	356	294	338	210
Mar. 18-----	626	383	35	537	478	---	295	364	537	294	507	278	601
Mar. 19-----	630	442	114	529	495	349	221	383	317	219	506	233	529
Mar. 20-----	636	526	69	557	125	391	159	380	289	---	522	433	592
Mar. 21-----	615	514	196	---	205	562	276	291	459	392	519	345	592
Mar. 22-----	637	534	285	569	---	555	415	181	292	248	504	221	---
Mar. 23-----	391	359	199	411	---	573	361	290	515	530	469	521	575
Mar. 24-----	231	548	199	467	484	511	210	389	434	337	530	297	499
Average-------	538	472	157	512	357	490	277	326	406	336	508	332	565
Mar. 25-----	653	172	56	460	---	159	280	---	495	477	531	466	165
Mar. 26-----	656	435	374	434	219	524	363	---	521	471	197	455	120
Mar. 27-----	522	272	244	515	220	345	398	405	190	462	142	468	266
Mar. 28-----	529	192	129	386	152	174	350	---	85	203	331	189	201
Mar. 29-----	683	134	112	378	101	33	392	446	169	475	184	414	395
Mar. 30-----	682	161	200	298	356	427	435	447	383	---	107	76	332
Mar. 31-----	486	343	195	460	316	429	480	465	159	---	226	104	337
Average-------	601	244	187	419	227	299	385	441	286	418	245	310	259

1960	Canton Island Pacific Area	Cape Hatteras, N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.	Davis, Calif.	Dodge City, Kans.	El Paso, Tex.	Ely, Nev.	Flaming Gorge, Utah	Ft. Worth, Tex.
Mar. 4-----	---	589	256	529	277	548	113	137	510	497	420	439	295
Mar. 5-----	682	596	265	546	306	427	83	88	520	(563)	285	405	174
Mar. 6-----	---	599	297	535	416	346	217	122	415	(580)	361	403	118
Mar. 7-----	---	442	335	241	258	488	330	168	297	581	472	293	404
Mar. 8-----	---	577	292	499	382	226	173	523	178	522	539	510	57
Mar. 9-----	---	91	427	71	227	439	297	394	524	571	481	500	597
Mar. 10-----	---	256	463	294	441	172	241	499	115	601	548	566	128
Average-------	---	450	333	388	330	378	208	276	366	(560)	444	445	253
Mar. 11-----	648	327	289	43	369	399	278	283	521	587	323	525	474
Mar. 12-----	---	268	243	284	483	506	90	132	337	596	379	241	363
Mar. 13-----	---	621	293	494	470	436	264	446	61	(460)	191	186	143
Mar. 14-----	607	629	323	495	253	148	184	535	57	616	516	203	91
Mar. 15-----	648	229	498	33	332	126	---	477	345	652	369	230	355
Mar. 16-----	661	50	486	83	53	298	---	524	548	628	595	547	569
Mar. 17-----	673	102	403	117	267	591	---	532	642	560	588	337	680
Average-------	647	318	362	221	318	358	204	418	359	(586)	423	324	382
Mar. 18-----	---	69	295	307	230	371	---	513	607	629	608	586	700
Mar. 19-----	639	630	340	578	469	274	---	523	431	629	597	589	682
Mar. 20-----	500	612	318	513	142	618	---	534	583	653	571	600	708
Mar. 21-----	489	593	378	567	393	619	437	520	429	656	601	(602)	716
Mar. 22-----	215	654	352	588	319	636	256	496	607	648	601	602	687
Mar. 23-----	192	697	461	594	375	605	300	541	436	516	578	585	721
Mar. 24-----	(634)	654	401	556	245	614	499	363	497	627	614	---	423
Average-------	(445)	558	363	529	311	534	373	499	513	623	596	(594)	662
Mar. 25-----	642	694	378	462	504	224	492	270	622	440	623	---	265
Mar. 26-----	---	302	500	473	201	605	232	450	592	659	522	554	233
Mar. 27-----	623	655	408	540	306	562	279	356	594	629	409	416	471
Mar. 28-----	588	637	470	328	102	559	185	545	490	666	463	231	648
Mar. 29-----	656	581	553	259	378	(376)	77	544	192	681	642	625	723
Mar. 30-----	587	230	68	---	243	37	319	376	580	639	363	387	---
Mar. 31-----	---	608	85	611	28	550	172	430	550	614	471	540	705
Average-------	619	530	352	447	252	(416)	251	424	517	618	499	459	508

1960	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grand Junction, Colo	Great Falls, Mont.	Greensboro, N. C.	Griffin Ga.	Hartford, Conn.	Indianapolis, Ind.	Inyokern Calif	Ithaca, N Y	Lake Charles, La.
Mar. 4-----	297	600	309	504	318	569	---	183	439	505	--	532
Mar. 5-----	182	444	---	392	363	576	536	289	542	545	283	289
Mar. 6-----	327	618	---	454	351	553	489	473	478	486	438	269
Mar. 7-----	257	627	---	341	---	344	220	464	487	477	356	---
Mar. 8-----	467	554	276	506	342	544	582	509	426	615	392	85
Mar. 9-----	420	590	265	344	268	80	49	563	159	551	500	--
Mar. 10-----	(441)	364	465	583	397	459	563	477	438	613	520	188
Average-------	(341)	542	329	446	340	446	467	423	494	542	415	272
Mar. 11-----	261	118	453	496	265	310	45	556	286	602	545	236
Mar. 12-----	162	---	479	464	467	483	596	548	548	468	477	553
Mar. 13-----	426	562	471	227	305	618	550	455	504	636	414	202
Mar. 14-----	303	568	411	140	351	628	397	354	443	644	550	147
Mar. 15-----	449	48	356	273	---	354	67	388	498	605	563	199
Mar. 16-----	476	230	401	590	421	128	118	463	60	655	379	397
Mar. 17-----	482	50	439	---	421	464	467	25	366	649	316	118
Average-------	366	263	430	365	372	426	320	398	387	608	463	265
Mar. 18-----	488	478	472	---	397	345	541	264	488	660	494	568
Mar. 19-----	492	655	409	---	437	460	468	337	348	674	272	592
Mar. 20-----	490	675	475	---	457	609	576	436	290	671	448	584
Mar. 21-----	489	656	354	---	471	399	680	527	591	665	449	594
Mar. 22-----	370	675	180	---	374	556	660	183	419	509	275	537
Mar. 23-----	225	489	495	---	467	618	687	588	386	396	492	554
Mar. 24-----	471	621	351	606	442	350	613	193	297	675	372	527
Average-------	432	607	391	---	435	477	604	361	403	607	400	565
Mar. 25-----	427	530	458	602	397	434	175	---	379	672	500	140
Mar. 26-----	446	640	424	591	417	545	611	---	565	670	519	130
Mar. 27-----	101	547	516	414	416	592	367	---	558	581	494	289
Mar. 28-----	539	506	381	196	249	539	284	453	490	680	69	279
Mar. 29-----	528	554	487	624	226	295	53	451	421	690	472	241
Mar. 30-----	383	288	249	593	257	116	490	47	106	527	124	639
Mar. 31-----	540	706	382	467	449	502	678	65	100	648	53	517
Average-------	424	539	414	498	344	432	380	254	374	638	319	319

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface tabulated in langleys.

1960	Lander, Wyo.	Laramie, Wyo.	Las Vegas, Nev.	Lemont, Ill.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Page, Ariz.	Portland, Me.	Pullman, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	Salt Lake City, Utah	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Seattle-Tacoma, Wash.	Shreveport, La.	Spokane, Wash.	Stillwater, Okla.	Tampa, Fla.	Tucson, Ariz.	Washington, D. C. (Ob & Test Dev Ctr)
Mar. 4-----	447	164	138	452	162	482	424	435	--	493	193	595	80	328	138	223	538	401	389	174	113	--	443	506	483	272	146	460	319	236	270	417	282	502	591	491	475
Mar. 5-----	466	376	511	497	597	561	377	459	500	274	142	500	79	523	231	239	411	471	264	478	396	---	497	501	440	269	105	366	477	269	133	207	118	270	571	562	500
Mar. 6-----	484	460	411	457	585	189	416	463	460	669	253	569	253	453	379	476	250	491	145	441	359	---	413	512	277	435	66	485	474	441	329	228	290	177	583	545	409
Mar. 7-----	432	301	524	517	417	113	297	415	532	662	258	420	157	157	459	373	363	249	176	444	278	- -	433	488	403	222	126	295	479	430	248	219	89	227	566	557	503
Mar. 8-----	507	413	543	423	578	67	391	405	494	329	268	576	434	371	399	526	125	385	56	534	266	---	304	404	325	457	146	519	506	492	129	70	231	56	582	553	5
Mar. 9-----	479	453	498	188	(110)	198	319	363	293	558	267	502	538	107	496	431	--	42	509	515	498	---	306	455	294	415	380	535	374	452	195	353	---	454	531	577	299
Mar. 10-----	538	456	570	463	391	216	451	455	531	569	379	569	508	238	464	417	163	336	64	564	476	---	396	532	450	529	112	569	517	427	187	125	- -	48	511	580	418
Average------	479	375	499	428	(448)	261	382	428	468	508	251	533	293	311	367	384	308	339	229	493	341	---	399	485	382	371	155	466	449	392	213	231	202	248	562	552	489
Mar. 11-----	502	396	539	249	264	369	398	374	278	745	158	532	415	125	523	547	548	102	529	495	503	-	524	486	313	226	297	546	525	534	413	305	-	476	121	561	547
Mar. 12-----	372	231	455	409	627	522	385	406	550	791	121	279	339	551	505	496	281	423	383	514	383	--	469	414	486	228	222	215	531	540	276	553	440	329	511	563	444
Mar. 13-----	415	315	523	365	537	521	515	539	464	755	290	499	66	566	317	421	505	508	310	373	346	--	421	328	508	81	73	445	537	460	141	190	126	339	519	581	441
Mar. 14-----	495	475	600	480	500	41	527	530	-	798	393	414	491	286	246	433	228	411	75	443	410	--	542	583	526	360	308	580	524	388	154	60	---	51	557	607	410
Mar. 15-----	469	497	548	430	493	37	524	544	-	[illegible]	276	508	602	94	442	493	243	122	158	581	454	--	515	567	409	339	511	583	559	474	336	77	237	65	86	610	478
Mar. 16-----	569	413	593	130	459	469	523	516	245	427	169	418	---	237	471	303	434	401	367	606	499	---	478	598	347	365	534	542	338	401	96	552	---	348	437	630	401
Mar. 17-----	432	269	597	561	313	619	558	570	580	450	472	511	462	385	70	31	489	399	466	594	141	---	564	615	546	363	347	599	256	57	288	498	—	357	26	---	202
Average------	422	471	549	347	413	369	190	497	383	643	311	151	396	320	368	389	390	295	327	515	391	---	[illegible]	513	448	309	327	501	470	409	243	319	---	281	280	592	409
Mar. 18-----	541	214	592	551	572	520	552	573	559	662	468	101	602	581	189	208	359	104	489	595	391	---	548	603	272	533	602	(606)	484	224	288	571	460	412	345	641	72
Mar. 19-----	541	539	597	514	467	563	557	584	556	754	482	417	604	257	394	374	415	162	553	596	210	492	550	612	539	537	593	614	451	317	358	589	416	510	590	645	486
Mar. 20-----	550	537	591	450	492	380	491	578	528	781	497	554	612	404	418	241	588	360	592	603	404	498	509	603	593	535	602	609	548	294	345	575	---	452	641	635	349
Mar. 21-----	534	[illegible]	595	499	620	623	504	557	409	803	49	641	611	524	440	379	543	532	598	600	313	506	547	602	392	562	598	548	317	392	422	600	446	541	618	624	498
Mar. 22-----	569	552	516	587	560	409	319	386	624	728	464	550	562	590	200	132	616	489	549	601	328	445	329	163	589	564	534	288	586	[illegible]	353	560	386	539	650	540	424
Mar. 23-----	447	532	291	300	646	617	307	314	325	541	484	633	535	625	563	548	---	582	569	447	445	408	472	330	139	560	475	265	417	571	308	380	415	540	547	334	537
Mar. 24-----	563	553	537	557	516	280	322	201	--	703	488	583	500	472	380	139	599	280	117	609	348	491	190	282	611	572	547	496	523	474	432	371	415	271	613	607	[illegible]
Average------	535	497	532	494	510	184	436	456	500	710	482	497	575	493	369	331	520	401	495	579	363	473	421	199	481	552	564	(447)	479	347	315	521	428	466	572	574	425
Mar. 25-----	569	535	597	252	531	126	157	92	308	541	180	612	205	473	522	536	440	428	307	624	450	506	453	455	366	555	71	117	615	583	137	109	188	592	612	611	523
Mar. 26-----	477	563	603	560	603	580	280	365	414	671	131	557	550	589	356	140	559	530	452	593	583	232	568	404	641	506	240	138	415	227	221	167	192	407	452	641	295
Mar. 27-----	506	414	534	435	657	408	85	152	--	420	244	564	630	553	492	486	443	529	497	407	252	275	526	97	433	336	148	160	243	497	313	366	182	496	541	620	562
Mar. 28-----	527	203	676	292	552	311	589	539	278	464	239	534	609	372	149	359	464	300	592	456	440	371	428	479	347	96	438	690	514	401	200	270	392	543	215	625	538
Mar. 29-----	596	551	636	415	(355)	662	561	599	404	528	480	533	634	89	191	465	100	83	488	645	559	84	555	627	178	580	532	689	205	489	409	462	98	406	516	662	490
Mar. 30-----	381	552	526	71	414	298	437	419	91	453	262	536	630	80	83	112	258	315	635	546	63	251	435	545	314	196	607	547	104	82	176	644	202	578	399	639	33
Mar. 31-----	367	203	629	226	66	582	556	576	277	552	82	403	532	313	99	267	425	158	522	642	114	216	202	605	438	548	348	694	102	141	201	594	270	524	610	647	383
Average------	489	431	592	322	(454)	424	381	392	295	561	[illegible]	534	541	353	313	338	384	335	499	559	337	276	510	415	374	403	384	433	332	344	237	373	262	478	478	633	389

Note. Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

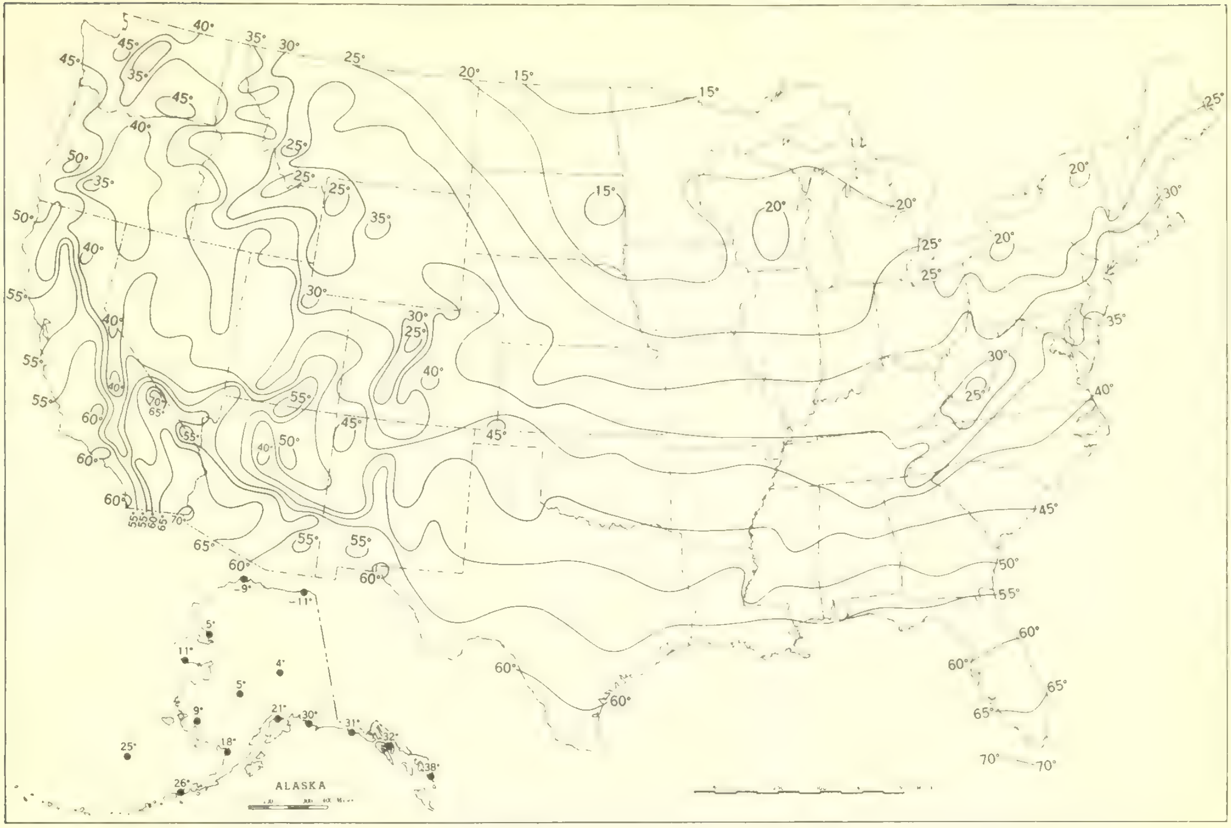
MARCH 1960

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bismarck, N. Dak.	390	421	474	462	449	429	---	---	446	---	417	437	410	---	---	453	418	414	---	---	347	311	375	386	370	335	---	---	---	348	---
Caribou, Maine	---	---	558	---	---	---	---	---	---	437	---	---	---	---	466	518	423	---	---	---	---	---	526	---	---	471	---	387	390	---	---
Fort Worth, Texas	---	---	299	---	---	---	---	---	323	---	323	---	---	---	---	398	441	380	362	353	364	327	332	370	---	---	301	319	370	340	359
Green Bay, Wis.	410	---	---	493	467	487	436	420	---	416	---	414	---	415	414	---	---	420	461	---	---	418	---	453	---	---	---	---	316	---	---
Silver Hill, Md.	425	405	---	470	---	514	504	504	438*	---	411	466	466	471	440	444*	---	385	418	446*	509	539	402	401	457	478	394	374	374	427*	457*

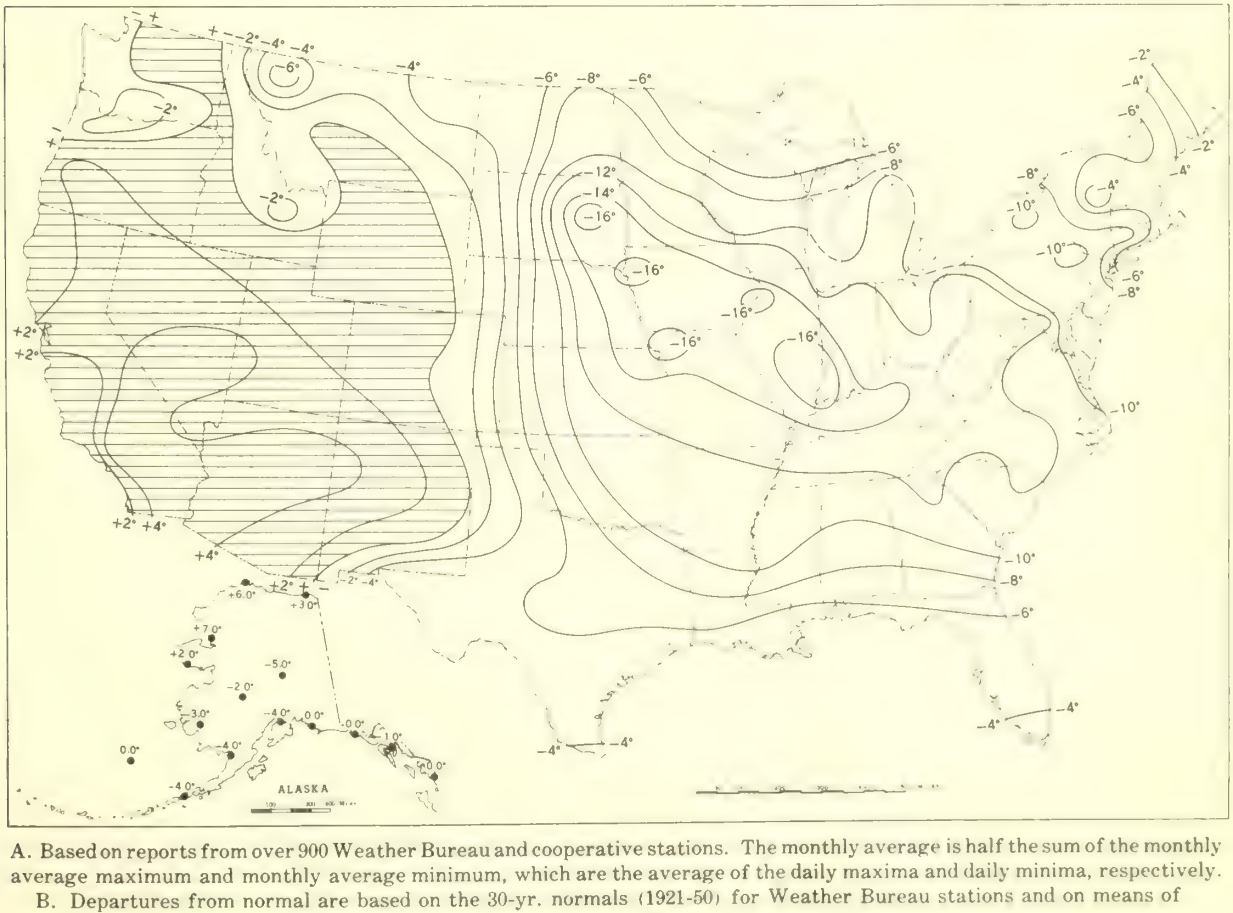
The spectrophotometer measures the total amount of ozone in the atmosphere, i.e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observations can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations; therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational precedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer," Annals of the International Geophysical Year, Volume V, Pergamon Press, 1957.

Chart I. A. Average Temperature (°F.) at Surface, March 1960.



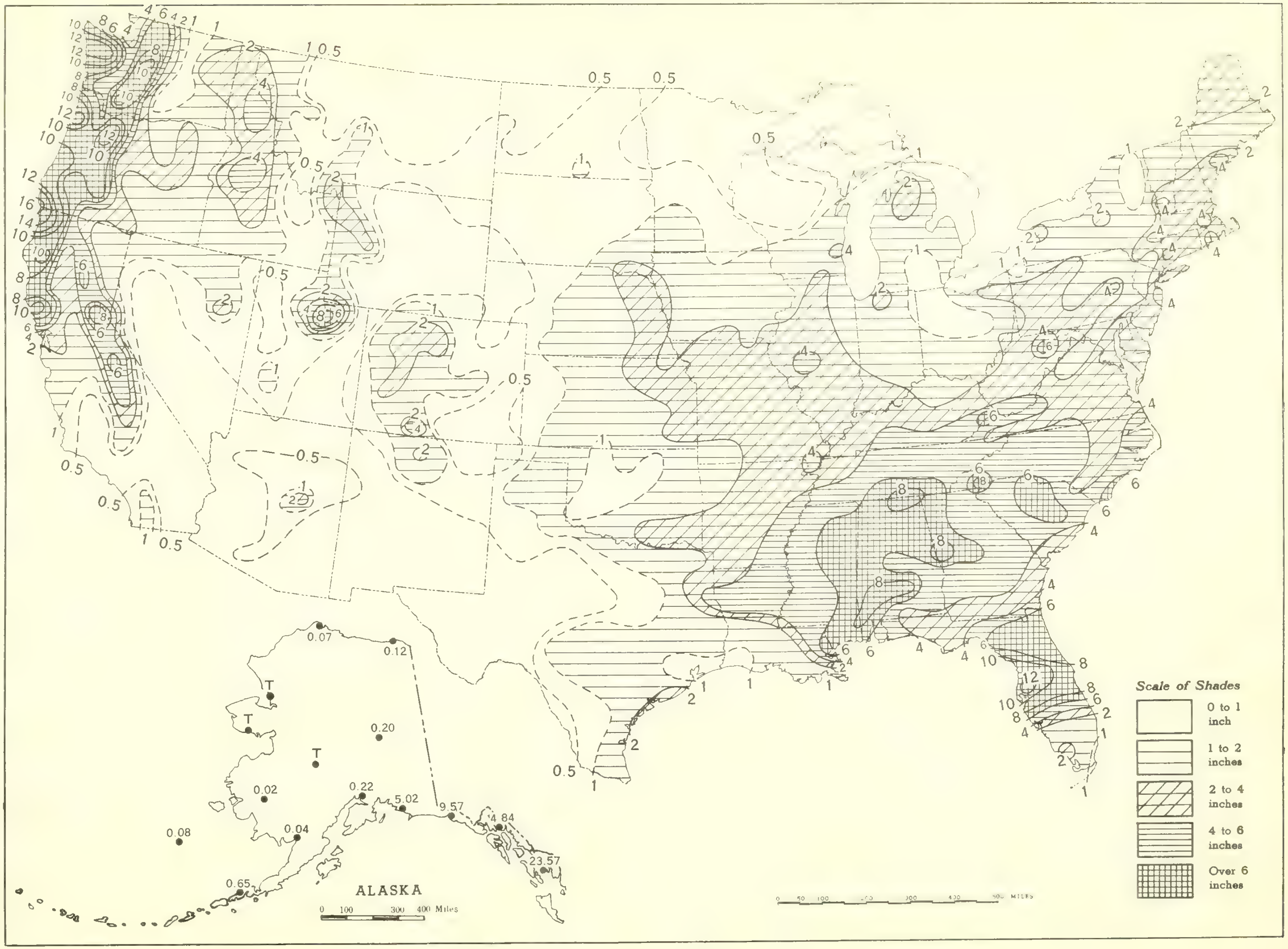
B. Departure of Average Temperature from Normal (°F.), March 1960.



A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

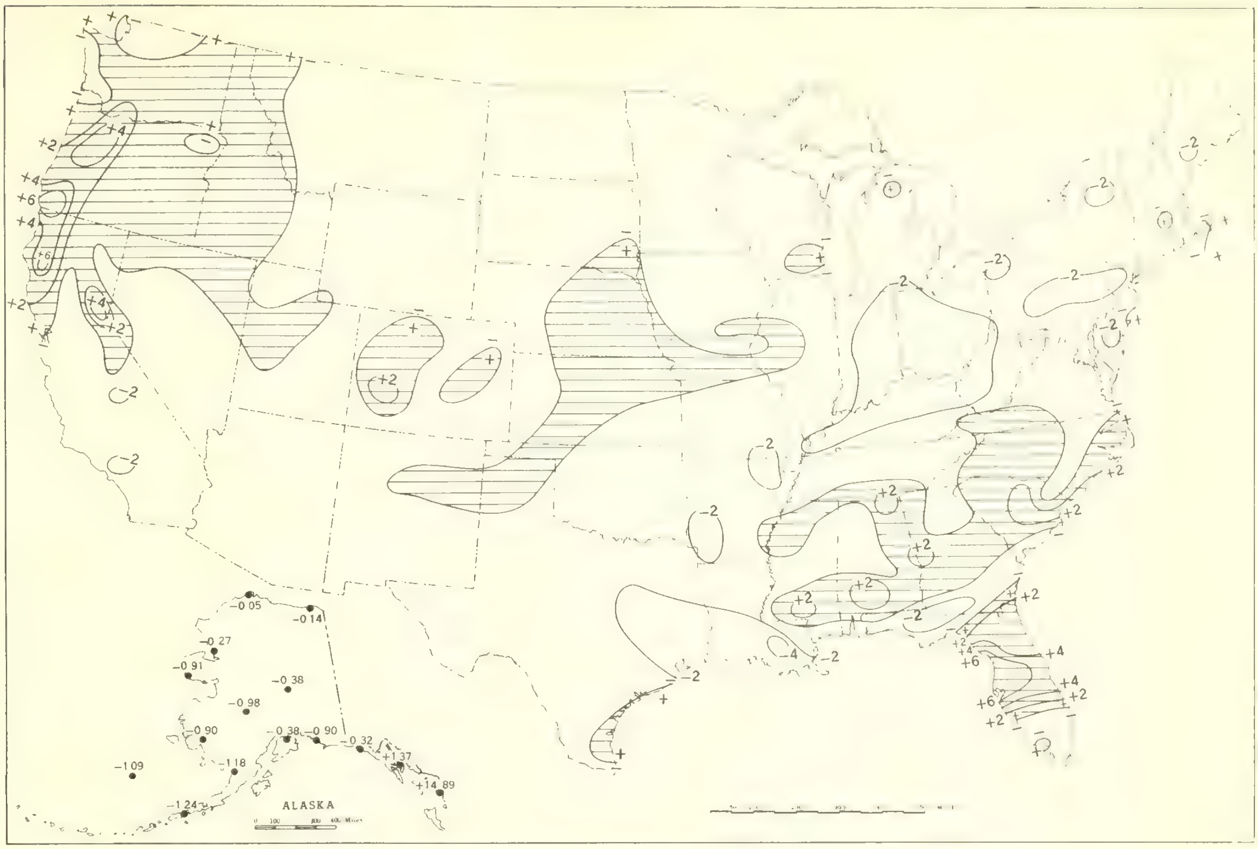
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), March 1960.

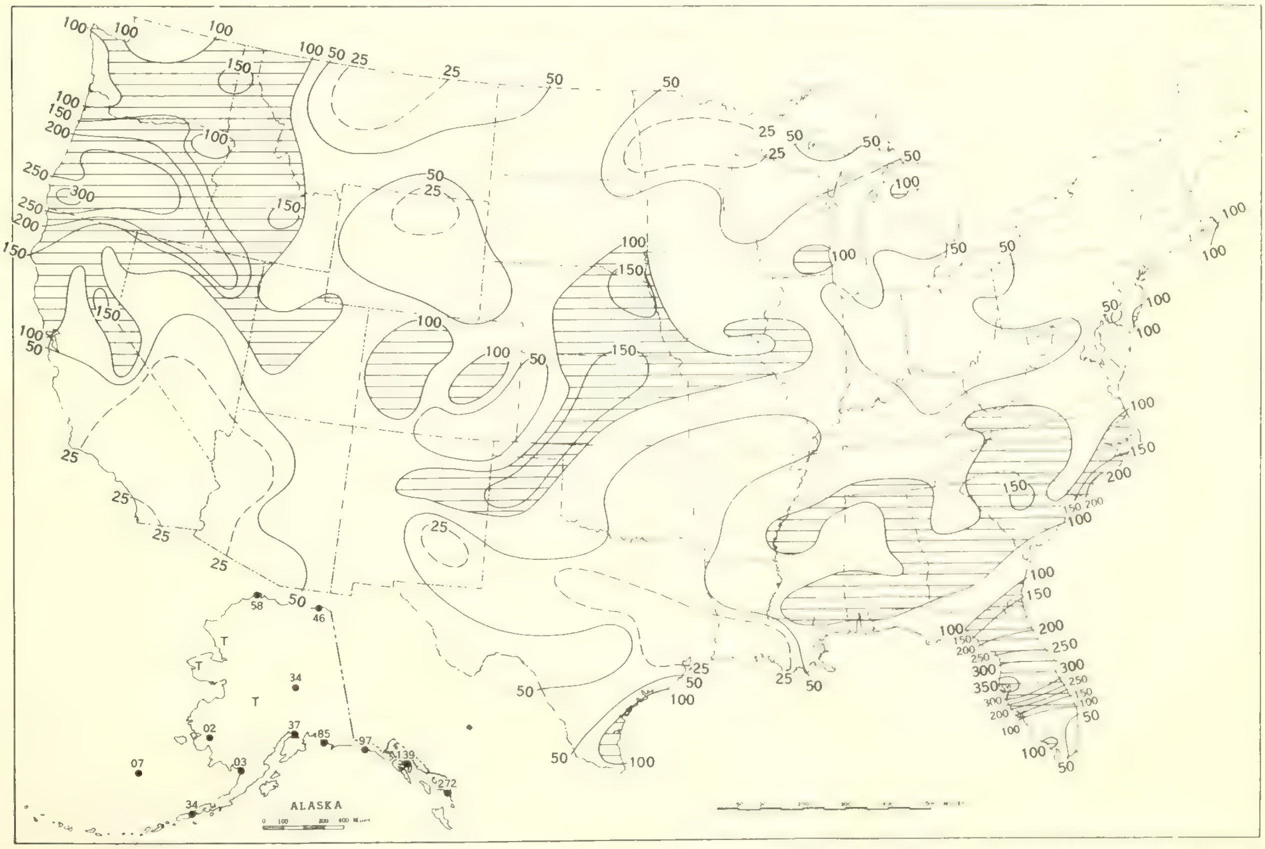


Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), March 1960.

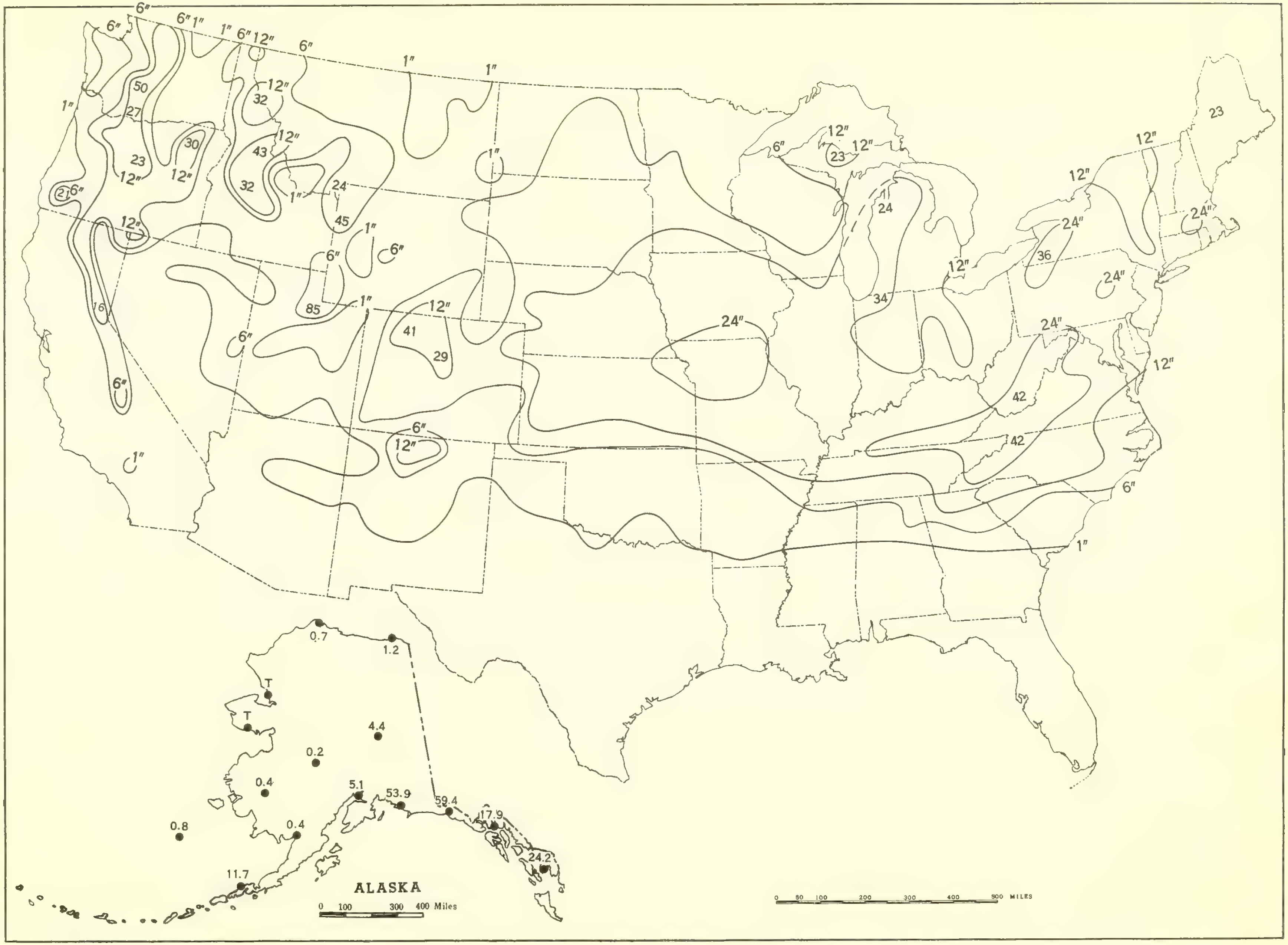


B. Percentage of Normal Precipitation, March 1960.



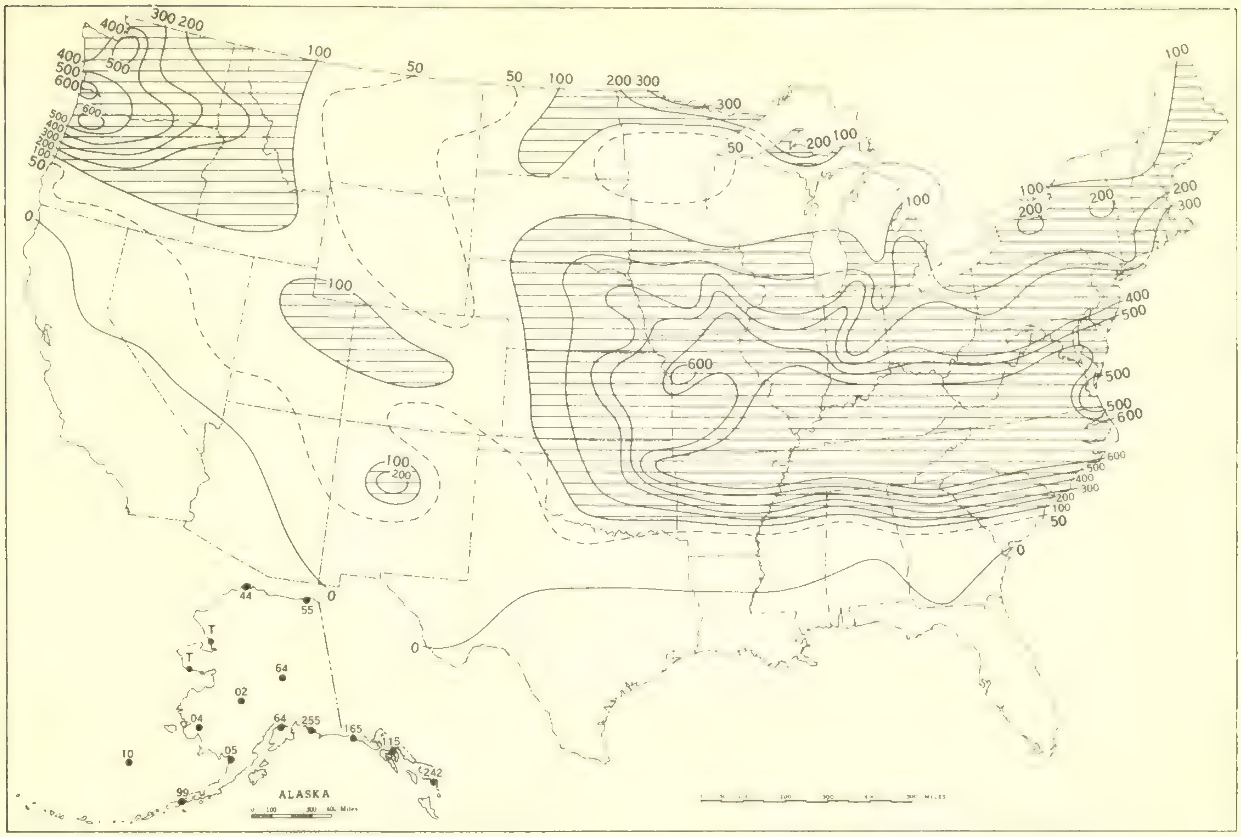
Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart IV. Total Snowfall (Inches), March 1960.

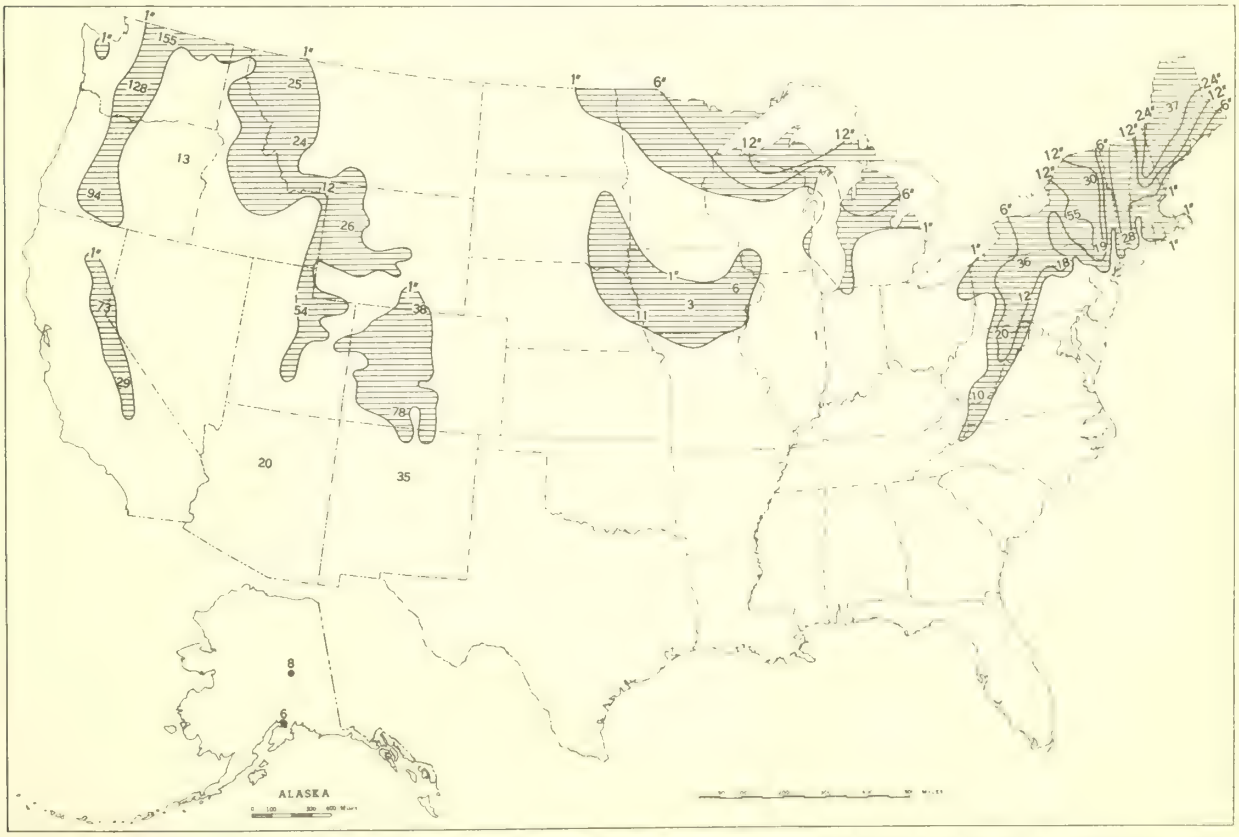


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, March 1960.

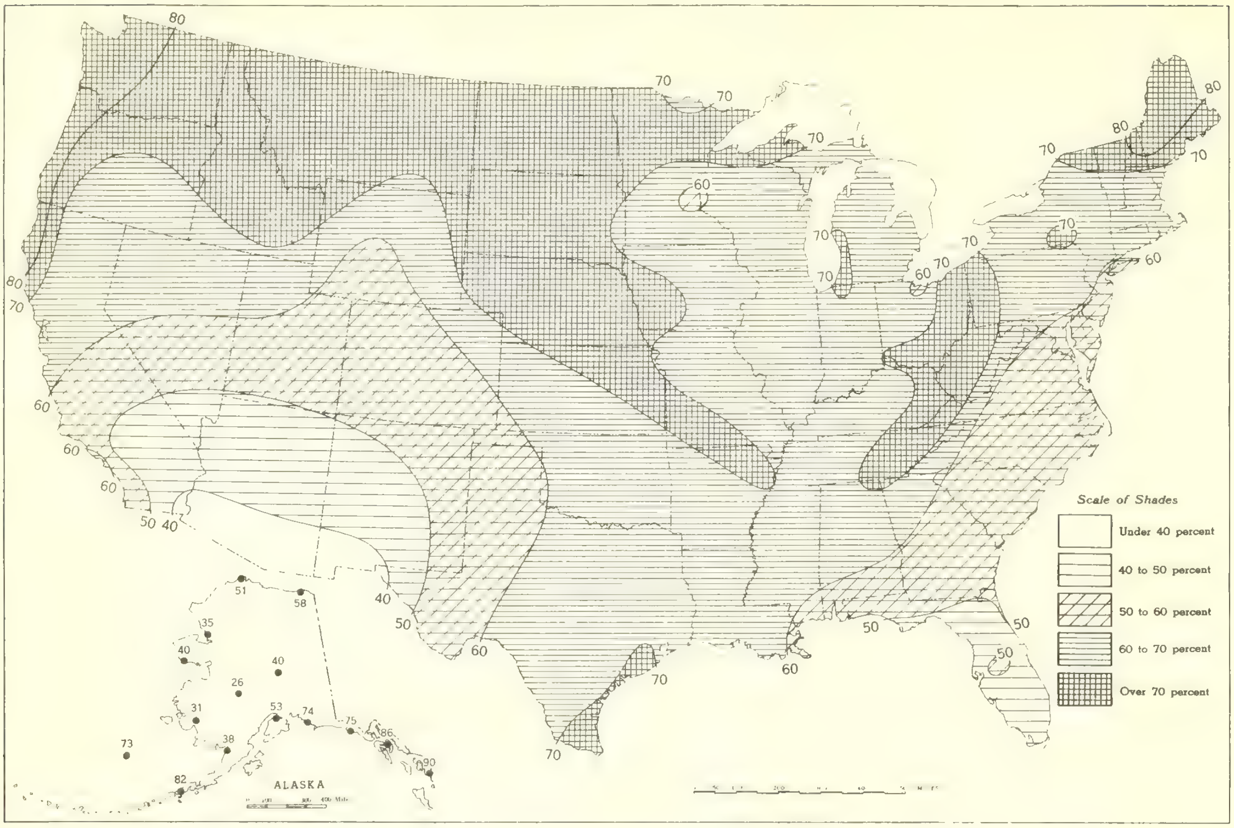


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., March 28, 1960

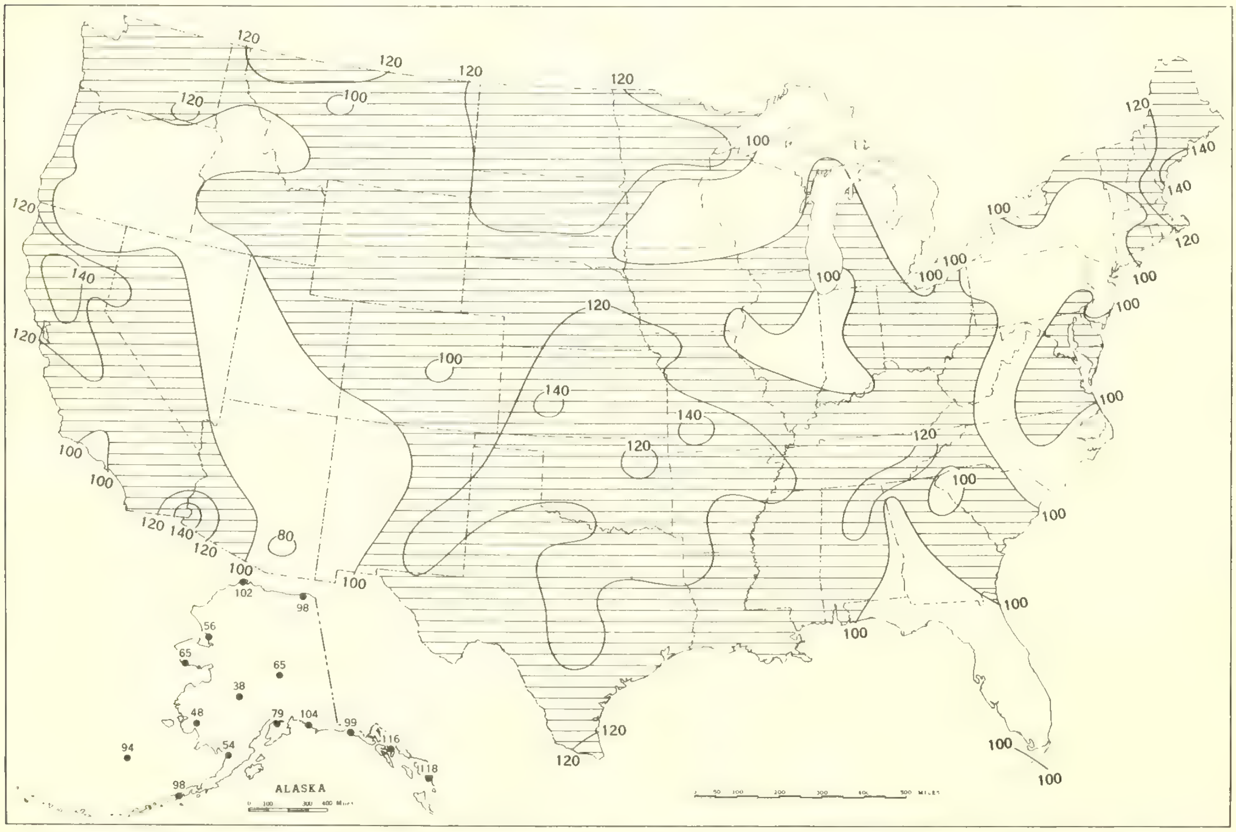


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a. m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, March 1960.

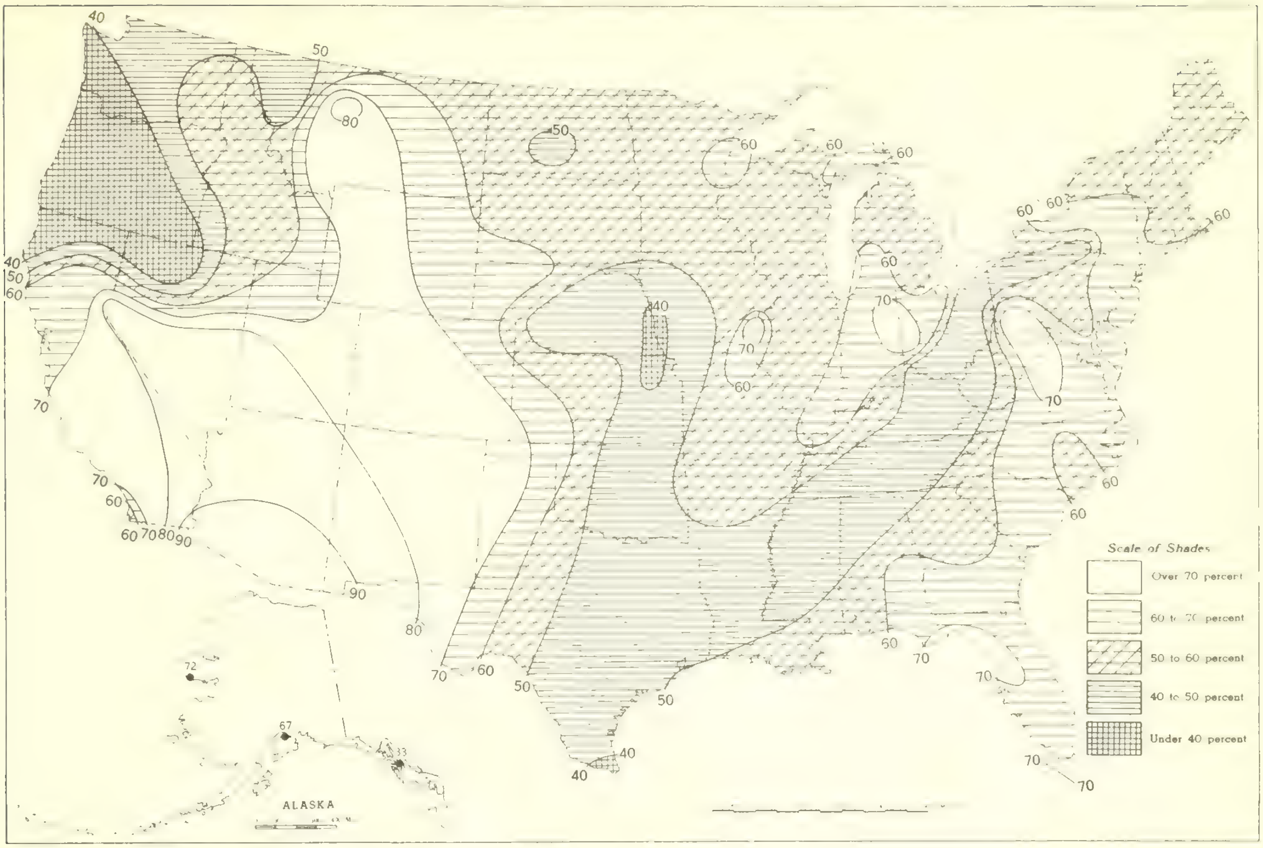


B. Percentage of Mean Monthly Sky Cover Between Sunrise and Sunset, March 1960.

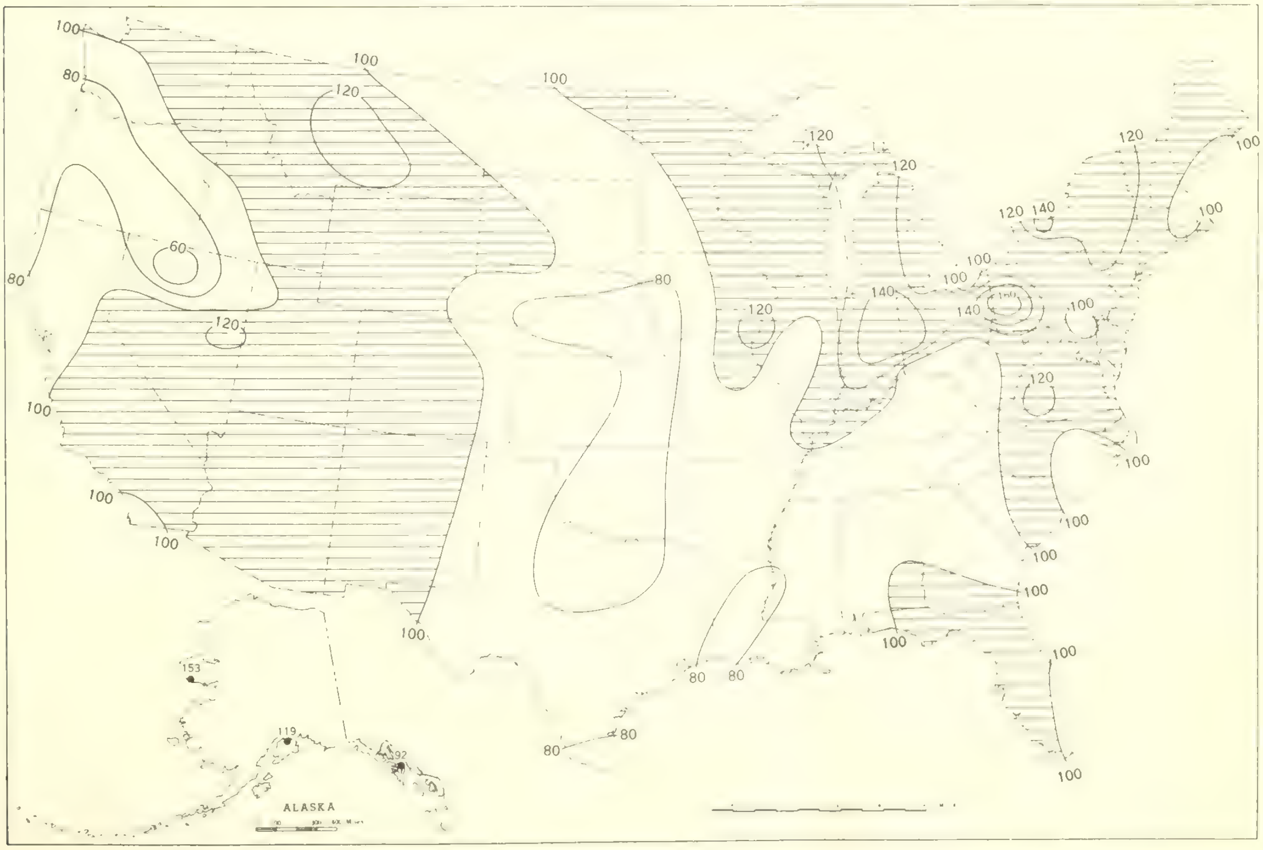


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of mean amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, March 1960.

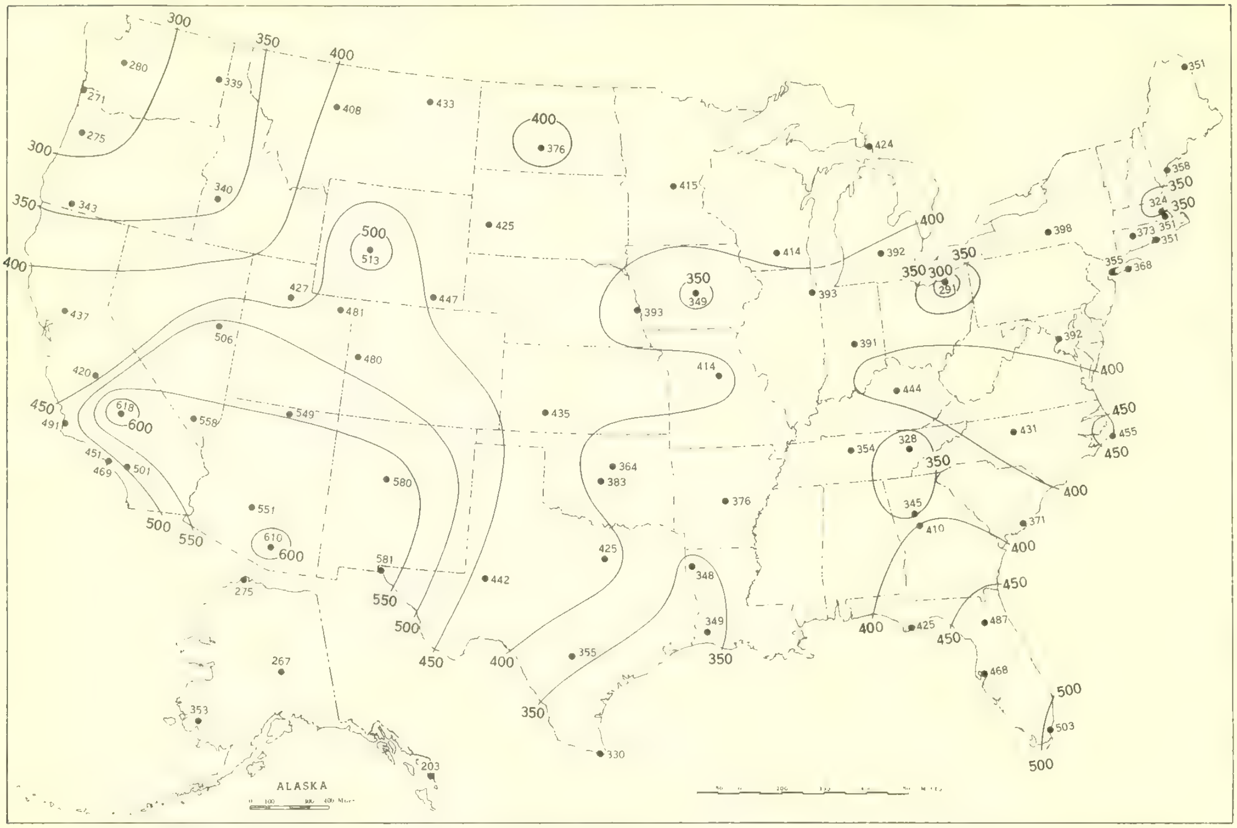


B. Percentage of Mean Monthly Sunshine, March 1960.

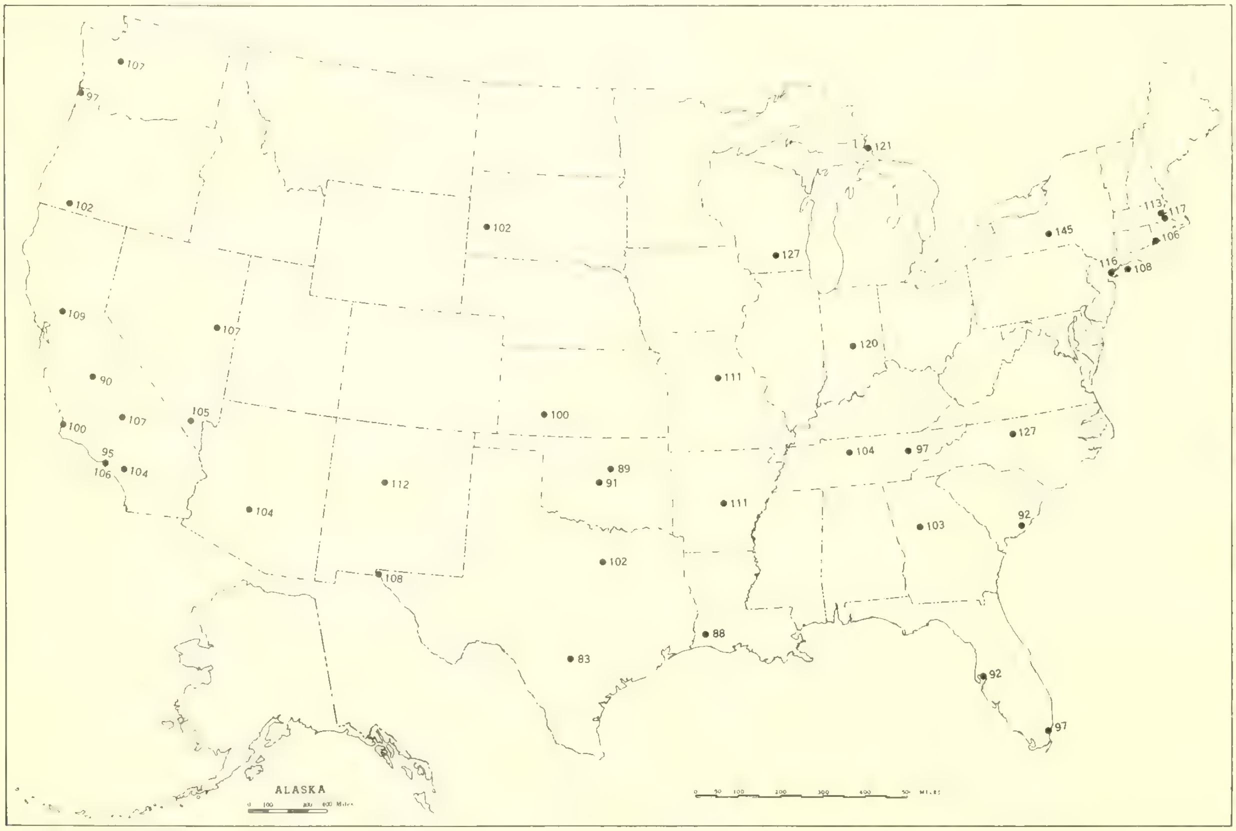


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, March 1960.



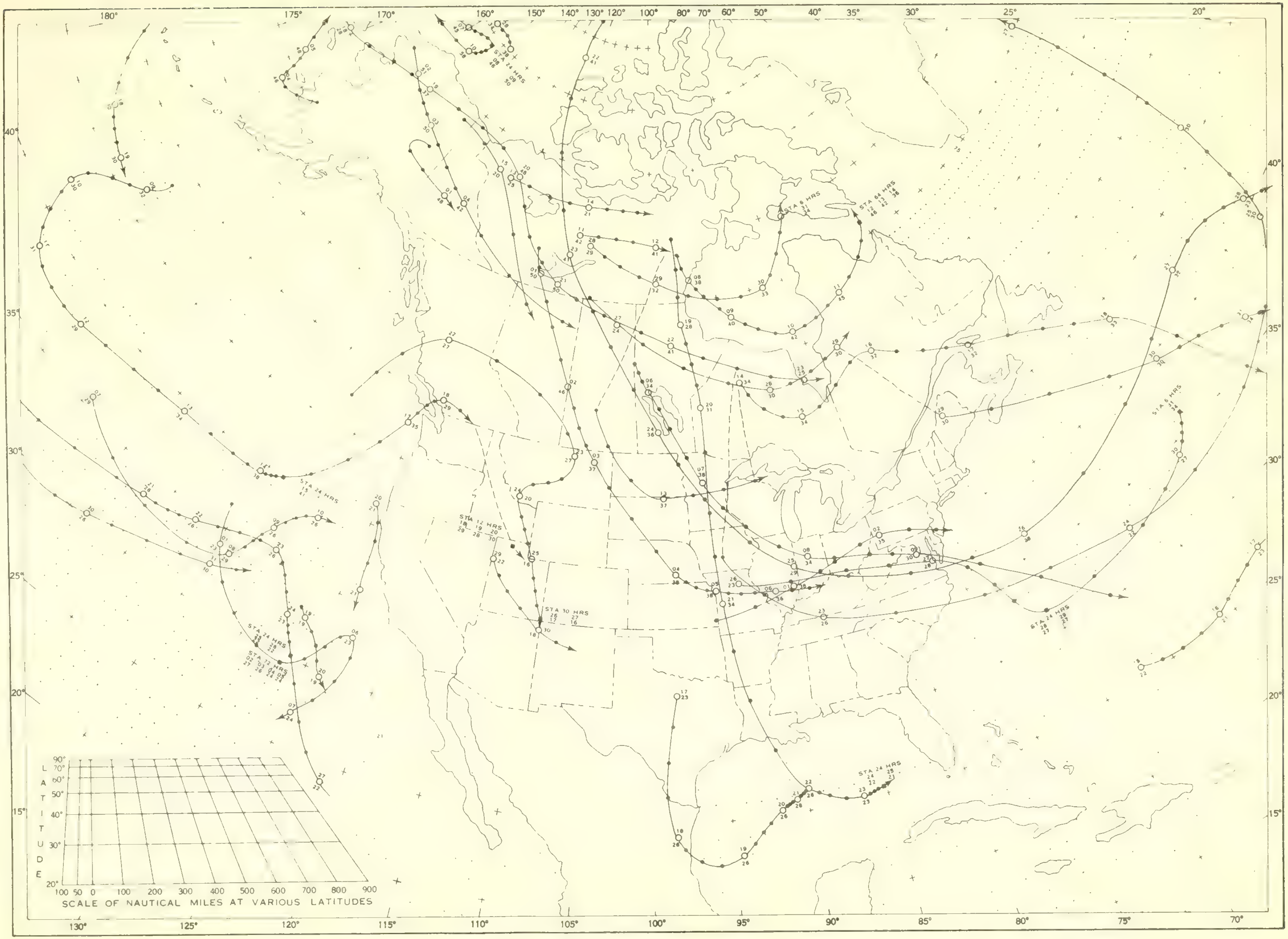
B. Percentage of Mean Daily Solar Radiation, March 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. $^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

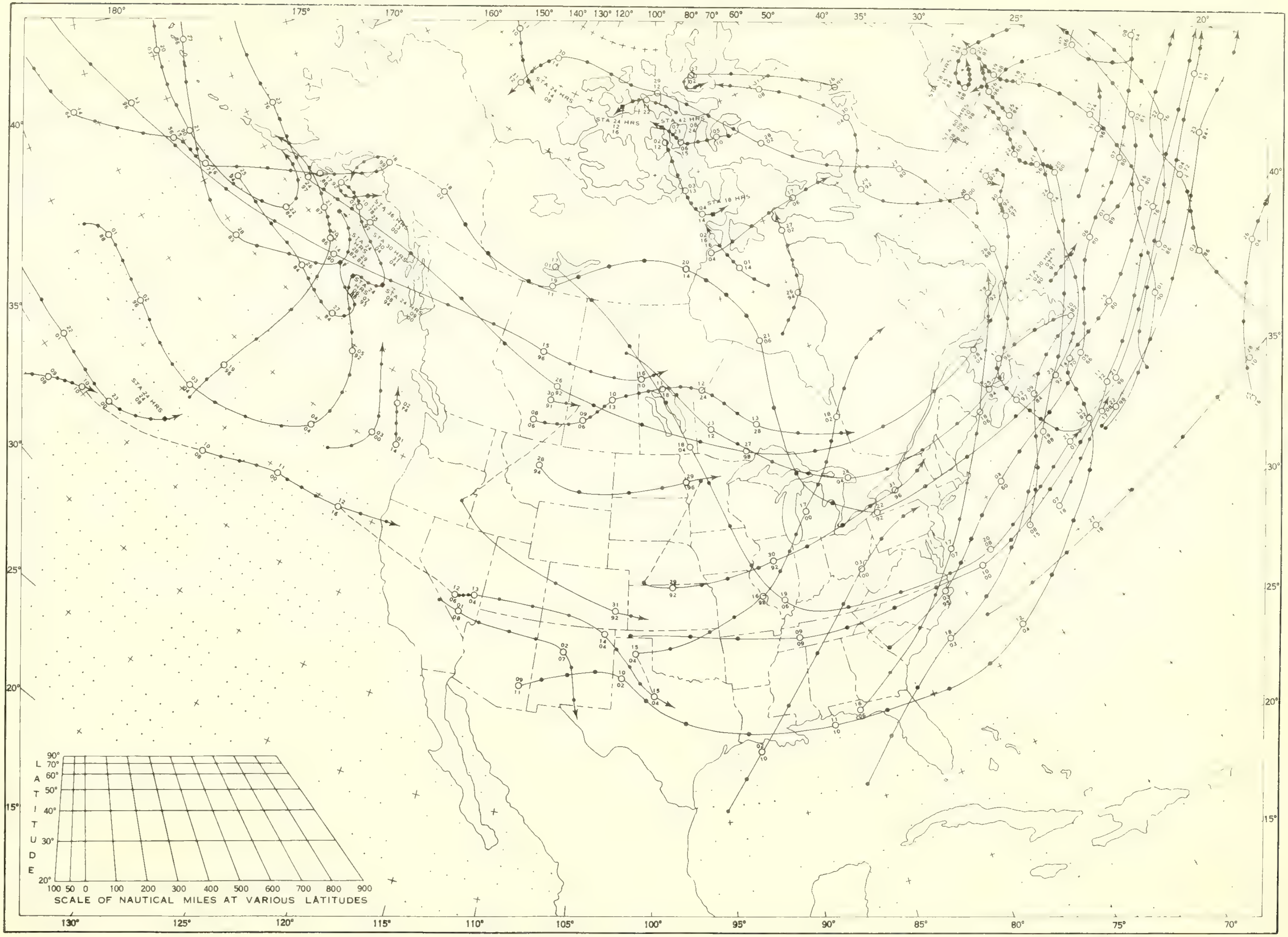
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, March 1960.



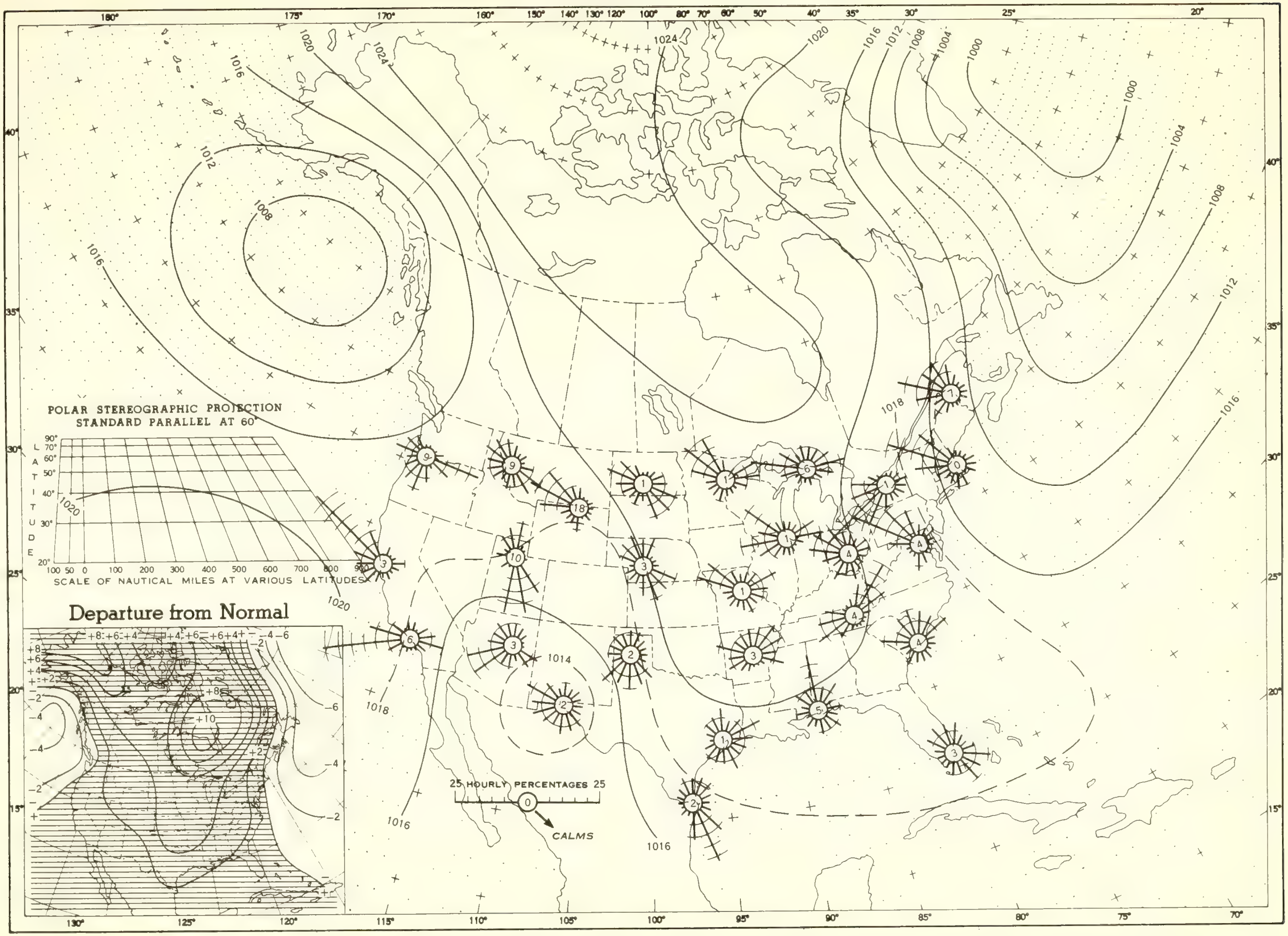
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, March 1960.



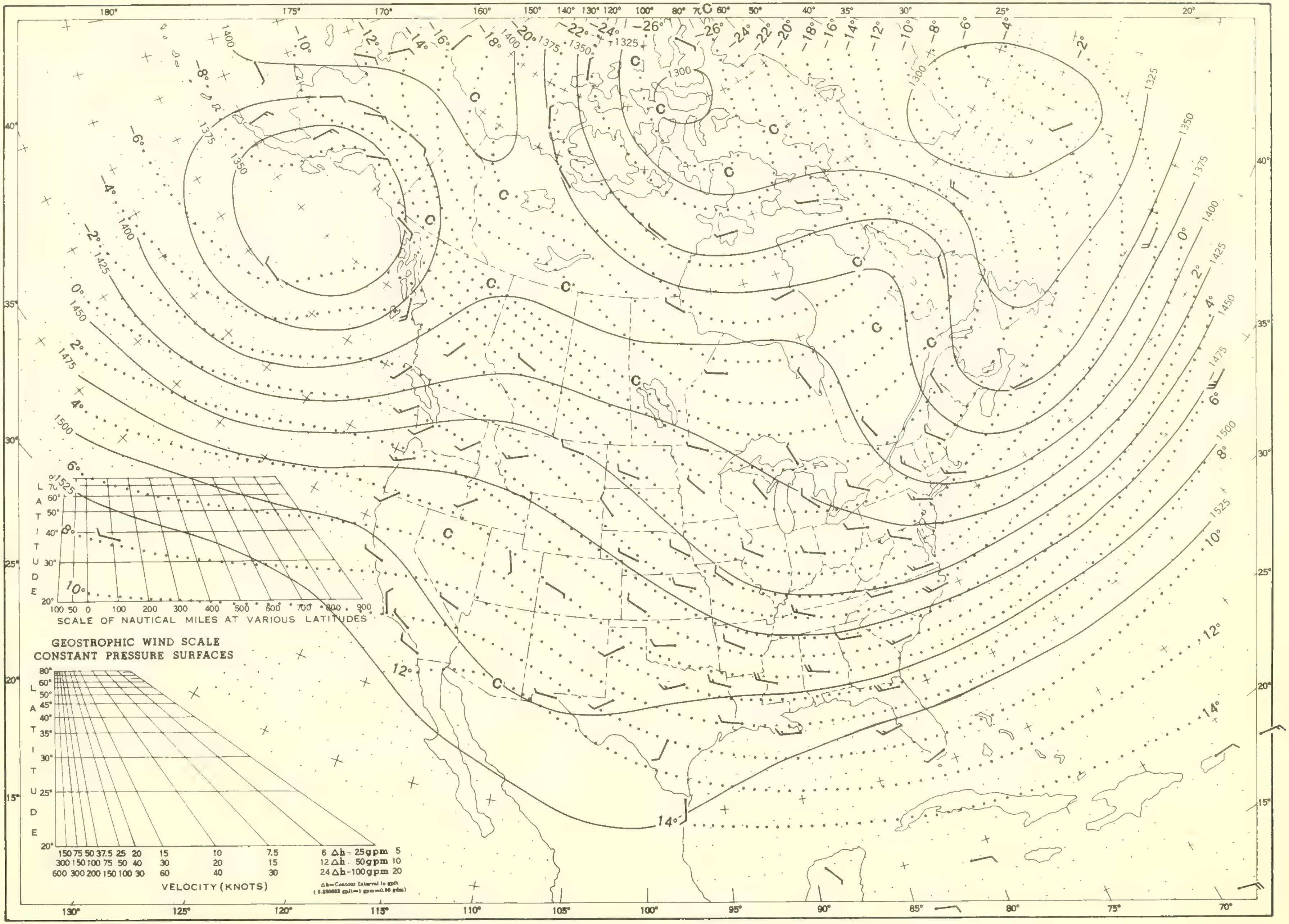
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, March 1960. Inset: Departure of Average Pressure (mb.) from Normal, March 1960.



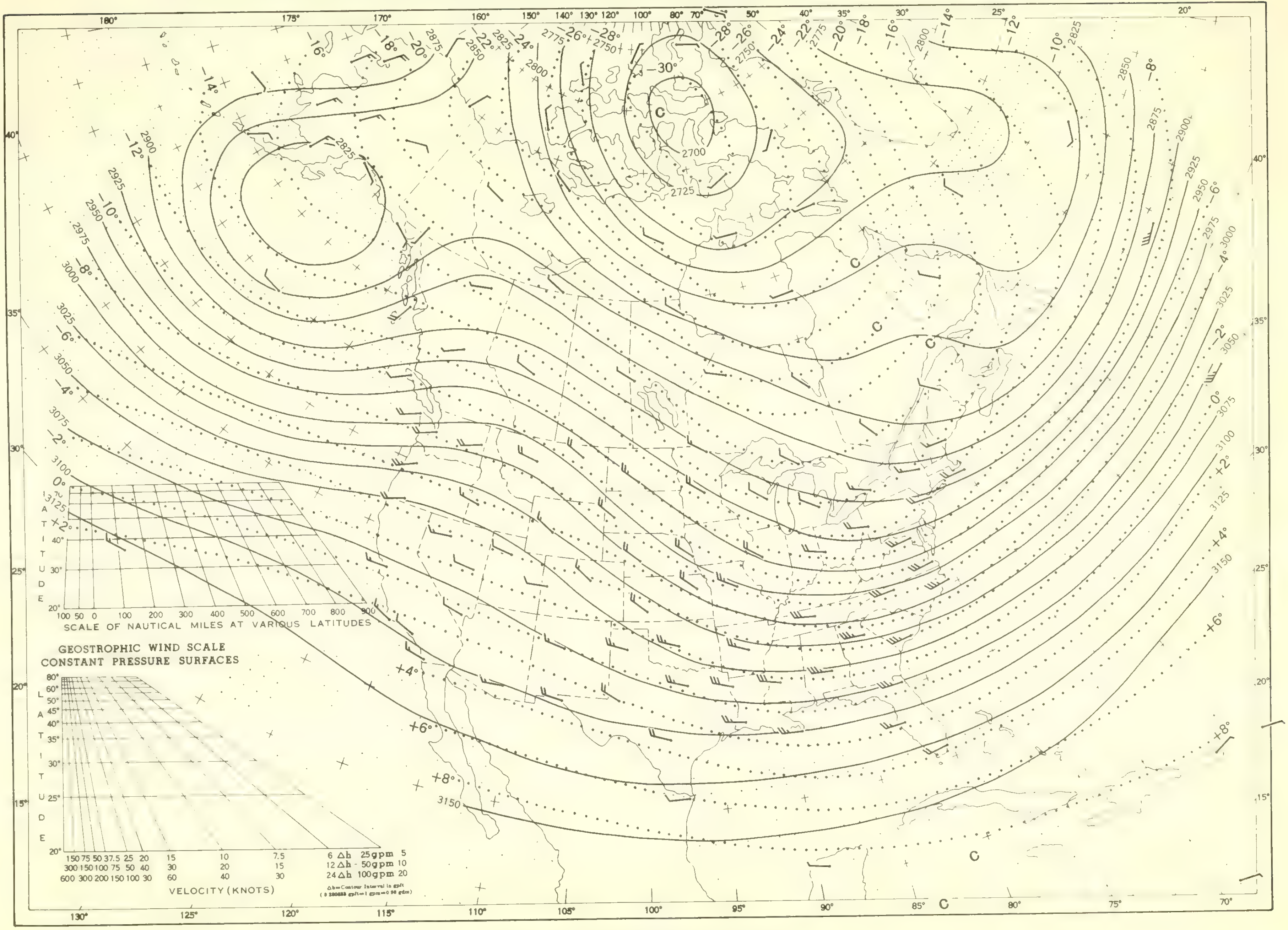
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, March 1960. Average Height and Temperature, and Resultant Winds.



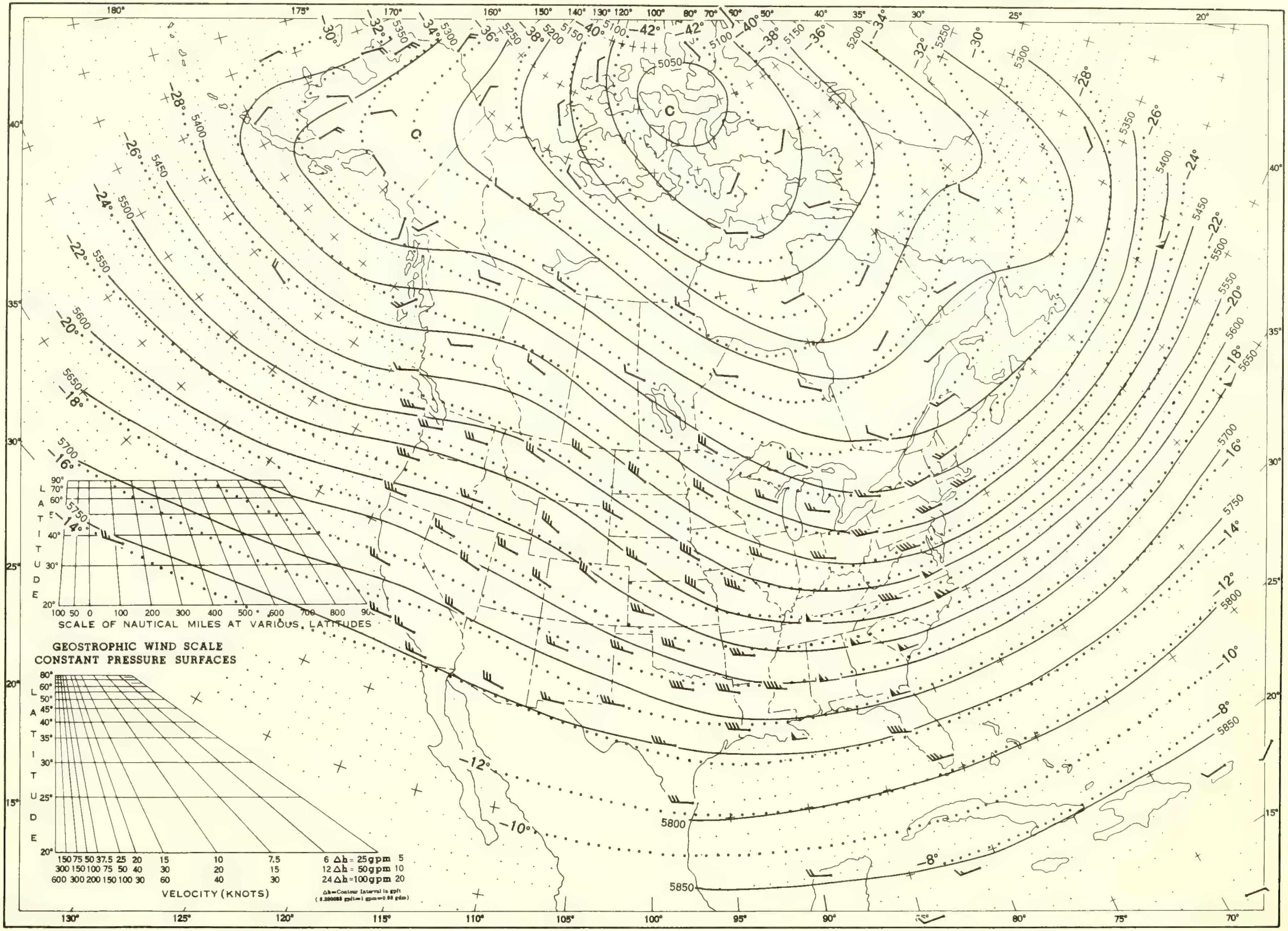
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, March 1960. Average Height and Temperature, and Resultant Winds.



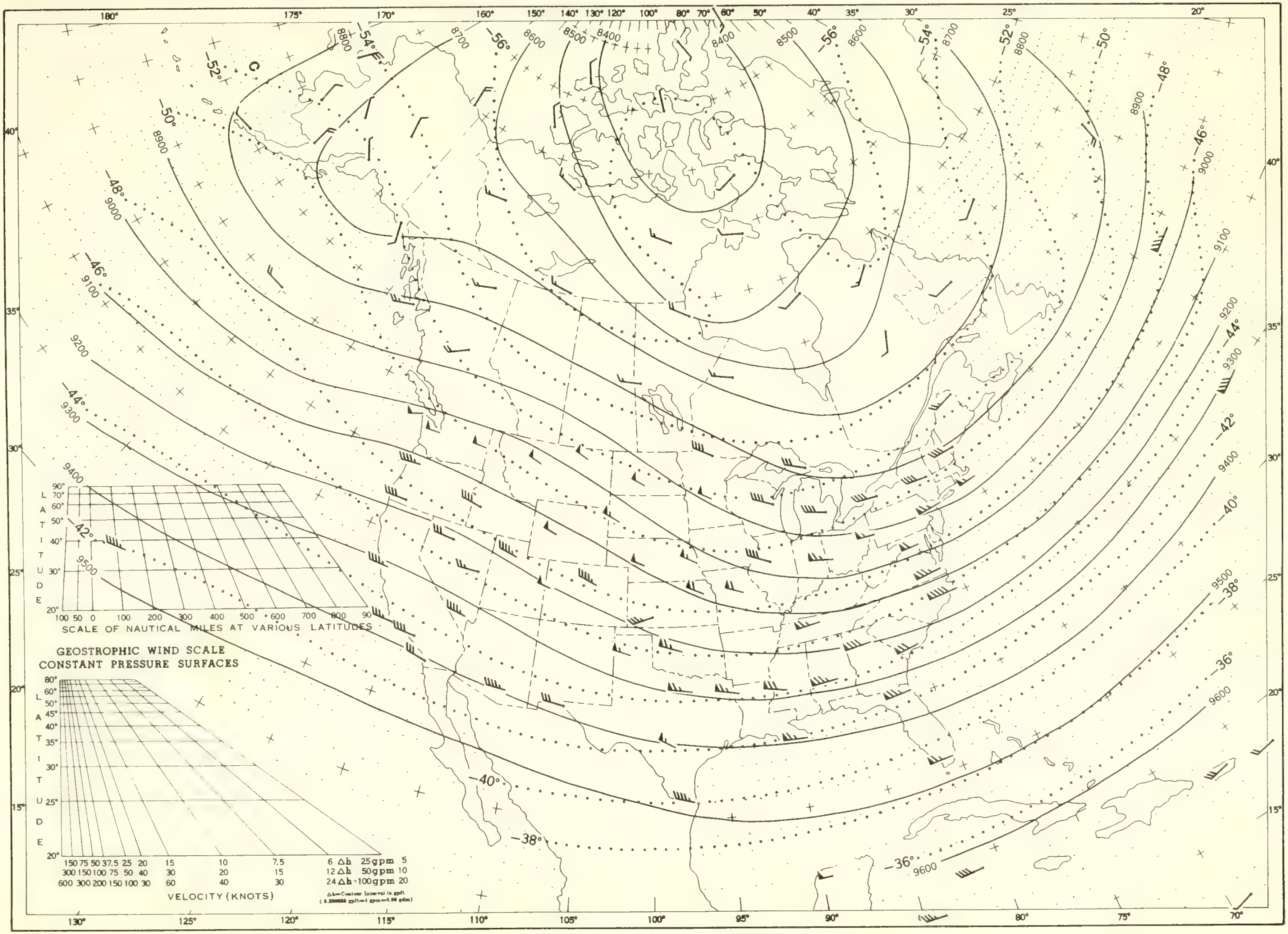
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, March 1960. Average Height and Temperature, and Resultant Winds.



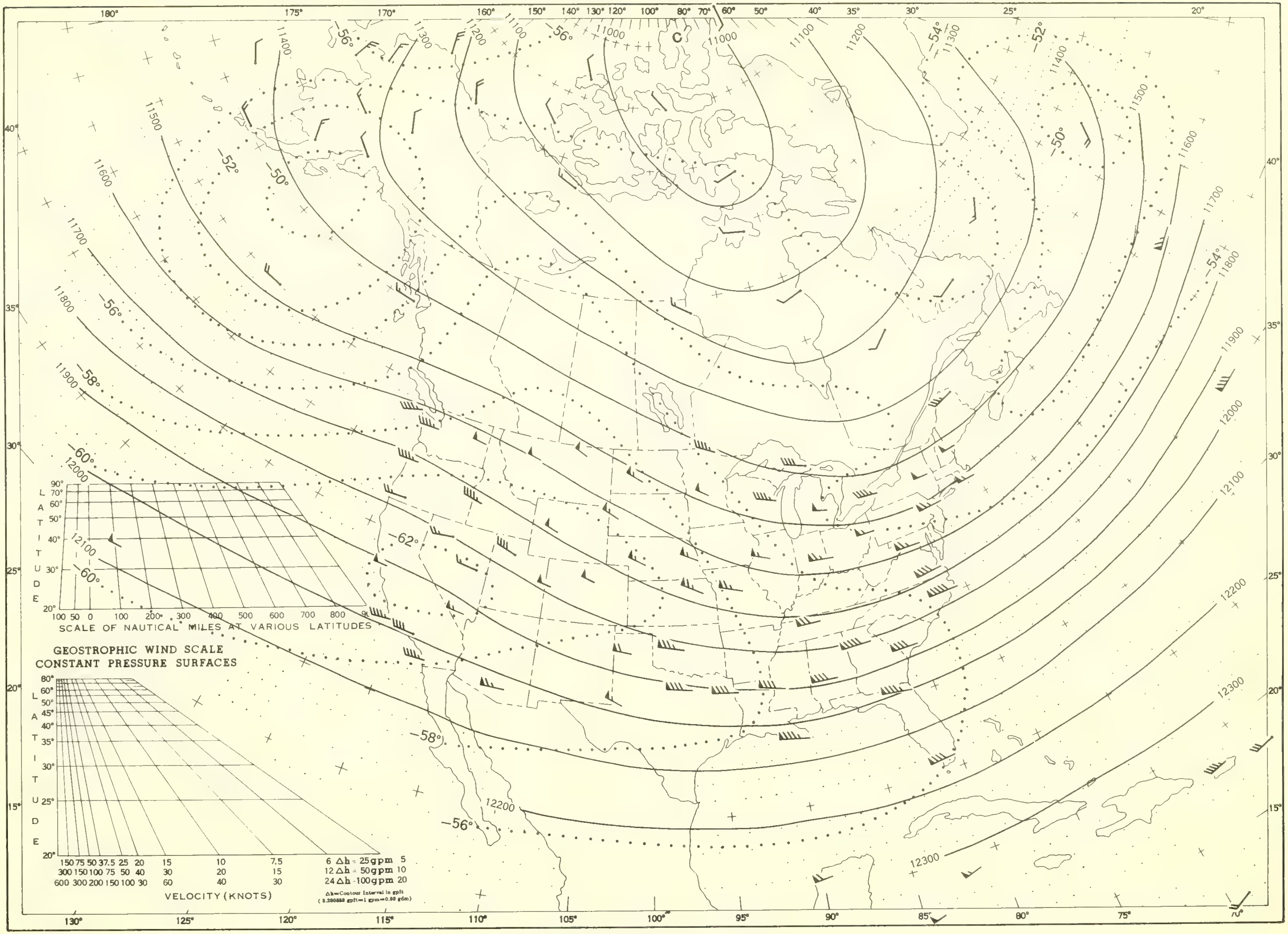
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, March 1960. Average Height and Temperature, and Resultant Winds.



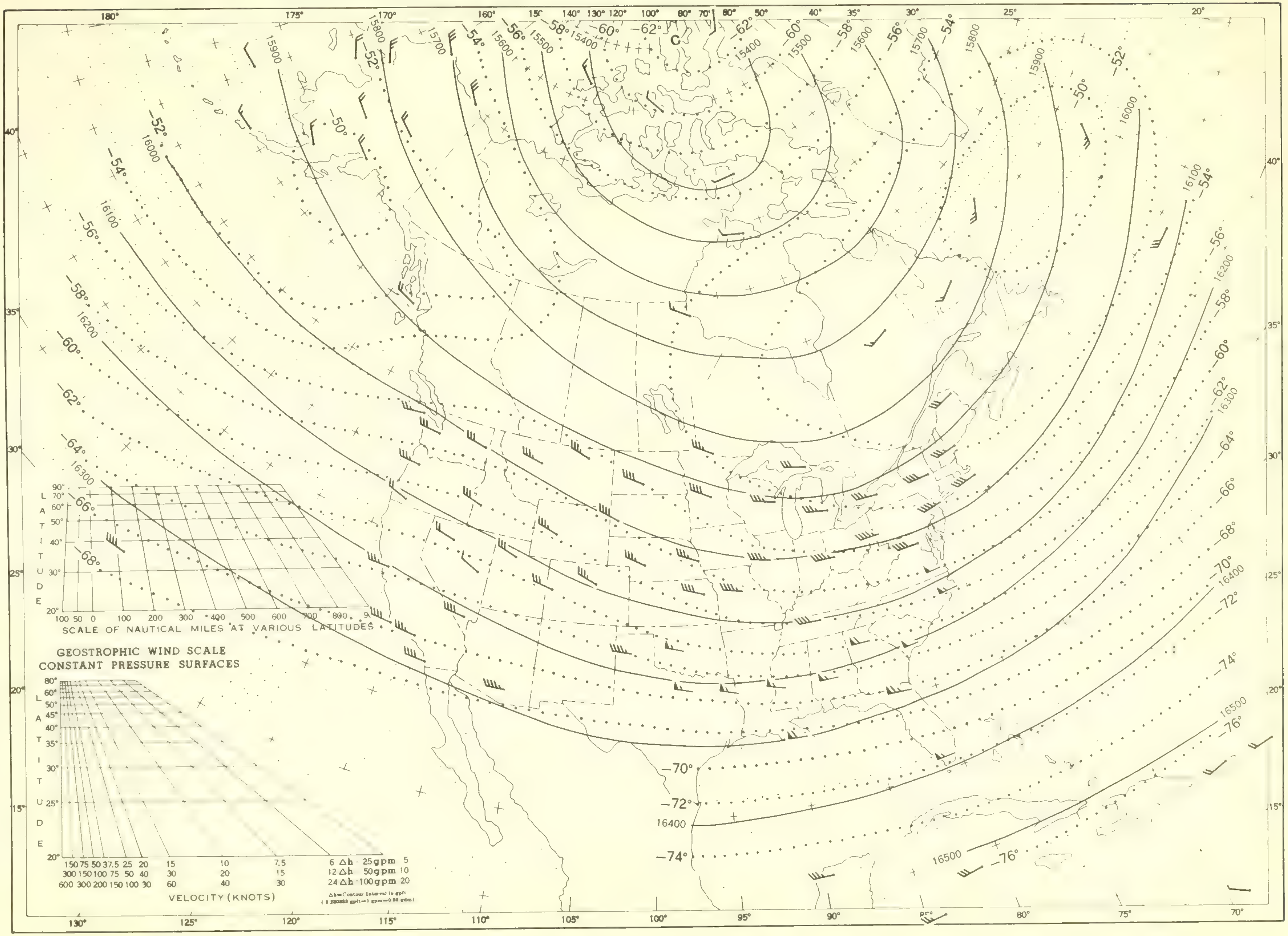
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, March 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, March 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

APRIL 1960
Volume 11 No. 4

ASHEVILLE: 1960

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 4 APRIL 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

The weather of April 1960 was relatively mild and dry over most of the Nation. East of the Rocky Mountains, however, temperatures fluctuated widely, with a sharp cold snap about the 9th through the 11th and hot spells during the latter parts of the second and third weeks when temperatures rose to midsummer levels. In the Far West freezes during the second half of the month were responsible for heavy fruit damage in a few localities. Some flooding occurred in the Southeast and parts of New England during the first week, and in the Missouri and upper Mississippi Basins during the first half of the month. The month was windier than usual in many northern and western areas, and owing to dry surface soil in the far western Great Basin and northern Great Plains, a few scattered duststorms were reported there.

TEMPERATURE.--Temperatures for the month averaged slightly below normal in the far western Plateau region and along the Canadian Border west of the Great Lakes, and slightly above to much above elsewhere. Relative to normal the month was warmest from the west-central Great Plains to the Middle Atlantic States where monthly averages ranged up to 6° or more above normal. Baltimore, Md., and Norfolk, Va., with monthly averages of 61.7° and 63.7°, respectively had their warmest Aprils on record.

East of the Rocky Mountains the first 10 days were relatively cool, with lowest temperatures generally occurring on the 9th to 11th when freezing extended down into northern Florida for one of the latest spring freezes on record there. Rome, Ga., reported 23° on the morning of the 11th, the lowest temperature on record there for so late in the spring. Temperatures of 21° at Valley Head, Ala., on the 10th and 16° at Blairsville Experiment Station, Ga., on the 11th equaled the lowest temperatures ever recorded in those States during April.

After this cold snap, unseasonably warm weather prevailed east of the Rockies until near the end of the month. Temperatures rose to unusually high levels in many sections from the 12th to the 17th and from the 19th to the 26th. Numerous early season highs during the latter period ranged from 85° at Denver, Colo., on the 21st to 95° at Washington, D. C., on the 23d. The highest temperature for the month was 106°, recorded at two stations in California on the 21st.

In the Far West temperatures generally were above normal the first half of the month, and much above the first few days when many stations recorded their highest for the month. The latter half of the month was relatively cool, with many stations recording their lowest temperatures during the last week.

PRECIPITATION.--During the first decade precipitation occurred on 3 to 7 days from the Mississippi Valley to the Atlantic coast. In this same area precipitation was again general on the 17th and 18th, 21st, 26th, and 27th, and 29th and 30th. In the Great Plains precipitation was general on the 29th, but spotty during the remainder of the month. In most areas east of the Rockies precipitation was of light intensity and monthly totals were below normal. Main exceptions were in the upper Mississippi Valley and along the Atlantic and central Gulf coasts, where occasional heavy amounts boosted monthly totals to normal or well above.

Precipitation was unusually frequent in some northern ern areas east of the Rockies, where Escanaba, Mich., had measurable precipitation on 21 days, a new April record. Marquette, Mich., measured 5.73 inches for the month, the second greatest April total on record. In contrast, this was the driest April since 1930 at Little Rock Ark.; since 1911 at Texarkana, Ark.; since 1931 at Vicksburg, Miss.; and since 1934 at Dayton, Ohio.

In the Far West the heaviest and most extensive precipitation occurred during the last week, mainly during the storm of the 27th through the 29th. Most of California received 1/2 to 2 inches of much needed rain from this storm and amounts of 1/2 to over 1 inch were measured in many other sections of the Far West. In the Far Southwest many stations received no precipitation at all during April.

The average precipitation for Puerto Rico was the greatest on record for April.

SNOWFALL.--Unusually heavy snow for April fell during the first 2 days of the month in an area extending from the central Great Plains to the Great Lakes. Falls ranged from 1 to 4 inches in north-central Kansas, 4 to 8 inches (locally up to 16 inches) in eastern South Dakota, and 4 to 12 inches in southwestern Minnesota.

On the 9th, 7 inches of snow accumulated in 6 hours at Binghamton, N. Y., and during the same storm falls of 1 to 5 inches were reported in the Appalachians of West Virginia, western Maryland, and Pennsylvania. Moderate snow fell in portions of the northern Great Plains and western Great Lakes region on the 16th and 17th.

During a snowstorm in the upper Rocky Mountain region from the 22d through the 26th, falls were unusually heavy in central and southwestern Montana. At Helena, Mont., a total snowfall of 20 inches for the month (all except 0.6 inch falling from the 22d to the 24th) was the greatest amount for April there since 1880, and an 8-inch depth was measured on the 24th. At Great Falls, Mont., drifting snow blocked roads at times in the area from the 22d through the 24th; a maximum depth of 10 inches was measured on the 24th and some drifts were nearly 2 feet deep. Heavy snow fell in portions of the central Rocky Mountains and west-central Great Plains during the closing days of the month, and Cheyenne, Wyo., reported 6 inches on the ground on the 29th and Denver, Colo., 4 inches on the 30th.

DESTRUCTIVE WEATHER PHENOMENA.--A tornado killed 3 persons and injured 66 at Sunnyside, Tex., on the 12th. Another tornado which struck the southwestern portion of Oklahoma City on the 28th injured 31 persons and caused property losses estimated at more than 1$ million. A severe hailstorm, with stones reported to be as big as baseballs and some larger, caused damage estimated at about $4 million in San Angelo, Tex., on the 26th. Windstorms, hail, and tornadoes killed one person, injured 6 others, and caused property damage estimated at several million dollars in Iowa on the 16th.

Freezes during the latter half of the month were blamed for heavy fruit damage in some localities of the Far West; included were areas around Grand Junction, Colo., Medford, Oreg., and Yakima, Wash. On the 10th and 11th freezing temperatures damaged some tender vegetation in a few localities of the Southeast.

This was the windiest April on record at Pocatello, Idaho, where the wind speed for the month averaged 15.3 m.p.h.

CONDENSED CLIMATOLOGICAL SUMMARY

APRIL 1960

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	2 Stations	91	24+	Valley Head	21	10	Green Bay	10.80	Florence	1.05
Arizona	Kofa Mountains	102	18	2 Stations	5	25	Junipine	3.06	118 Stations	.00
Arkansas	Gilbert	94	5	Mammoth Springs	24	9	Siloam Springs	5.26	Augusta	.48
California	2 Stations	106	21+	White Mountain 2	-8	24+	Crescent City 7ENE	8.18	15 Stations	.00
Colorado	Eversoll Ranch	94	21	Climax 2NW	-4	17	Wolf Creek Pass 4W	3.97	Saguache	.02
Connecticut	Westbrook	86	25	Coventry	18	11	Falls Village	4.85	Bridgeport WB AP	2.12
Delaware	3 Stations	92	26+	Georgetown 5SW	25	11	Newark University Farm	4.23	Selbyville	1.27
Florida	Jasper 3 SE	95	16	2 Stations	31	11	Miami Bay Front	15.39	Cedar Key	.61
Georgia	4 Stations	94	26+	Blairsville Exp Station	16	11	Morgan 5NW	9.72	Savannah Beach	1.27
Idaho	2 Stations	87	5	Obsidian 3SSE	3	16	Elk River 1S	4.90	Buhl	.00
Illinois	Palestine	90	24	2 Stations	18	10+	Morrison	6.42	Pontiac	1.45
Indiana	4 Stations	90	25+	Greensburg 3SW	17	10	Winamac	6.10	Evans Landing Dam 43	1.05
Iowa	3 Stations	94	23+	Saratoga 2E	14	9	Tripoli	6.69	Sac City	.99
Kansas	Syracuse 2WNW	94	21	3 Stations	22	3	Stilwell	8.21	Hugoton	.32
Kentucky	3 Stations	92	25+	5 Stations	18	11+	Mayfield	5.64	Maysville Dam 33	.56
Louisiana	2 Stations	91	22+	4 Stations	35	19+	Slidell	9.32	Book	.72
Maine	Hiram 2S	80	15	Squa Pan Dam	7	11	Sanford 2NNW	4.42	Bingham Wyman Dam	2.01
Maryland	2 Stations	96	25+	Bittinger 2NW	17	11	Elkton	4.47	Ocean City	1.17
Massachusetts	Lowell	81	14	2 Stations	19	11+	Heath	5.89	Salem CG Air Station	2.48
Michigan	2 Stations	88	23	Champion Van Riper Pk	-7	10	Ironwood	7.91	Standish 2S	1.23
Minnesota	Tracy Power Plant	92	23+	Thorhult 3E	0	9	Remer No. 2	5.65	Crookston NW School	.81
Mississippi	Newton Exp Station	92	29	Ripley	26	10	Pearlington 2NNE	10.31	Rockport	.71
Missouri	2 Stations	91	23+	Waynesville 2W	14	10	Pleasant Hill	13.29	Elijah	1.25
Montana	do	83	5	Yellowstone Pk NE ET	-2	16	Summit	4.91	Ridgway 1S	T
Nebraska	do	95	23+	Nenzel 20S	15	30	Bloomfield	5.31	Haigler	.64
Nevada	do	98	10+	Ruth	0	25	Austin	2.37	2 Stations	.00
New Hampshire	Windham	83	15	First Conn Lake	3	11	Bow Garvins Falls	6.02	Berlin	1.72
New Jersey	2 Stations	93	25	Layton 3NW	17	11	Sussex	4.87	Mays Landing	1.62
New Mexico	do	96	21	2 Stations	4	25+	Bateman Ranch	1.46	60 Stations	.00
New York	N.Y. Westerleigh Stat Is.	92	25	Old Forge	5	7	Hinckley	8.15	Westfield 2S	1.22
North Carolina	Gatesville	97	27	Celo 2S	11	11	Edenton	7.00	Manteo	1.24
North Dakota	4 Stations	82	15+	Langdon Exp Farm	-1	9	Wahpeton	4.63	Fairfield	.13
Ohio	do	92	25+	Charles Mill Dam	15	10	Norwalk	3.60	Portsmouth	.44
Oklahoma	3 Stations	97	6	Kenton	23	3	Wagoner	6.74	Vinson	.00
Oregon	2 Stations	86	30+	Crater Lake NP HQ	5	22+	Valsetz	13.08	Owyhee Dam	.08
Pennsylvania	Burnt Cabins 2NE	96	24	Bradford 4W Res.	15	11	Stroudsburg	5.59	Beaver Falls	.47
Puerto Rico	Dos Bocas PR	95	28+	Garzas Dam PR	51	16	Rio Blanco Upper PR	24.30	3 Stations PR	2.55
Rhode Island	Providence WB AP	79	15	Kingston	23	11	Woonsocket	4.40	Greenville	2.72
South Carolina	2 Stations	95	26+	2 Stations	22	11+	Caesars Head	6.48	Chappells	1.21
South Dakota	Canton	95	22	Ralph 1N	9	9	Centerville	6.91	Faith	.06
Tennessee	Knoxville U of Tenn	93	24	Mountain City 2	16	11	Brownsville	5.93	Joppa	.49
Texas	Rio Grande City 2ESE	104	30	Littlefield	19	3	La Grange	9.58	Several Stations	.00
Utah	Hite	90	6	2 Stations	4	17+	Pleasant Creek P. H.	2.80	Myton	.03
Vermont	Bennington 2NW	84	17	West Burke	9	11	Somerset	7.24	Burlington WB AP	2.64
Virginia	Stoney Creek	99	25	2 Stations	16	11	Halifax 5ENE	7.13	Nassawadox	1.00
Washington	Packwood	86	7	Mount Spokane Sum	12	16	Forks 1E	12.82	McNary Dam	.30
West Virginia	Harpers Ferry Nat Monmt	95	23	Kumbrabow State Forest	11	11	Pickens 1	4.27	Lakin	.96
Wisconsin	Dodge	89	22	Long Lake Dam	1	10	Gurney	10.56	Fairchild Ranger Station	1.09
Wyoming	Torrington Exp Farm	87	21+	Foxpark	-6	30	Bedford 2SE	2.67	Greybull 1S	.07

+ And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F or above	No. of days: Min. 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Max depth on ground	Wind: Average hourly speed	Prevailing direction	Fastest mile: Speed	Direction	Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.		#		°F.	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	992.3	1017.8	77	52	64.3	2.4	89	24	31	10	0	1	50	65	2.24	-2.41	0.57	8	5	0.0	0	8.5	S	36	S	1	8	12	10	5.8	67
Huntsville	605	994.5	1017.8	77	51	64.1	----	91	24	31	10	2	2	48	61	2.09	---	.74	7	3	.0	0	8.3	SE	*21	SE	1	10	8	12	5.5	--
Mobile	211	1009.4	1017.7	77	57	67.2	.5	85	30+	42	11	0	0	56	71	5.57	.47	2.03	8	9	.0	0	9.7	S	*34	NE	3	8	12	10	5.3	--
Montgomery	195	1010.1	1017.7	79	55	67.0	2.3	90	24	35	11	1	0	52	64	3.56	-1.25	1.86	7	7	.0	0	8.7	SE	40	E	3	11	7	12	5.5	70
ALASKA																																
Anchorage	90	1000.7	1005.8	41	27	34.1	-1.3	58	30	11	4+	0	21	24	66	.27	-.13	.09	7	0	3.5	5	7.3	NE	*30	SE	22	1	4	25	8.6	42
Annette	110	1005.8	1009.8	51	40	45.4	2.8	72	28	33	6+	1	0	36	73	14.08	5.95	4.48	21	0	.4	1	12.2	SSE	*35	SSE	12+	3	5	22	8.4	--
Barrow	22	1020.7	1021.3	3	-12	-4.6	-4.4	29	24	-30	4	0	30	-14	60	.49	.39	.37	11	0	4.9	15	12.7	ENE	*35	ENE	6	13	7	10	5.1	--
Barter Island	39	1017.3	1019.6	3	-11	-4.0	-5.0	27	24	-33	2	0	30	-10	74	.23	.04	.06	11	0	2.3	16	13.6	W	*14	E	8	8	4	18	6.7	--
Bethel	125	1007.5	1009.0	21	1	10.9	-15.9	46	30	-14	5	0	29	3	70	.74	.19	.28	9	0	8.8	4	14.1	N	*28	WNW	23+	12	10	8	4.4	--
Cold Bay	90	1003.4	1007.6	31	21	25.8	-8.4	42	30	11	12	0	30	20	78	1.52	.18	.75	13	0	10.0	5	13.5	NNW	*46	SE	21	0	8	22	8.5	--
Cordova	40	1004.7	1006.5	45	29	36.9	.5	60	30	20	11	0	23	31	79	4.05	-1.02	.91	16	0	22.3	6	5.8	ESE	*31	ESE	8	0	4	26	9.2	--
Fairbanks	436	991.9	1008.8	38	15	26.7	-2.2	74	30	-12	2	1	29	17	64	.40	.11	.14	6	0	6.9	7	7.4	NNW	*25	WSW	25	5	6	19	7.1	—
Juneau	17	1007.8	1008.5	50	32	40.9	1.4	64	28	26	14	0	17	33	76	3.13	.15	.93	15	0	1.3	T	8.6	ESE	*32	ESE	4	6	5	19	7.3	42
King Salmon	44	1003.7	1005.6	33	17	25.0	-8.1	45	30+	-6	4	0	28	17	72	.34	-.50	.11	11	0	2.4	1	12.9	NNW	*46	SSE	22	5	3	22	7.6	--
Kotzebue	10	1013.5	1014.1	18	-5	6.3	-7.5	46	30	-23	25	0	30	-2	70	.31	-.05	.15	7	0	5.5	22	8.0	WNW	*26	WNW	15	15	7	8	4.0	--
McGrath	334	995.6	1008.7	32	5	18.2	-7.8	58	30	-27	4	0	28	6	56	1.46	.97	1.10	8	0	12.0	29	6.8	N	*20	SSW	9	5	11	14	6.6	--
Nome	13	1011.5	1012.1	19	0	9.5	-11.5	46	30	-14	6	0	29	2	67	.17	-.61	.07	5	0	1.4	22	9.0	N	*35	NE	11+	15	11	4	3.7	69
Shemya	122	1006.8	1010.4	39	31	34.8	----	43	30	25	22+	0	23	29	81	.92	----	.33	13	0	3.4	T	18.3	NW	*49	SE	15	0	8	22	8.4	--
St. Paul Island	22	1010.2	1011.2	24	12	17.9	-12.2	34	9	-2	7	0	30	13	78	.30	-.72	.09	8	0	3.0	2	----	---	--	- -	--	5	8	17	7.1	--
Yakutat	28	1005.8	1008.0	48	29	38.6	2.1	64	27	20	10	0	23	31	74	5.82	-2.16	1.81	13	0	11.9	16	7.6	ENE	*32	SE	13	3	11	16	7.2	--
ARIZONA																																
Flagstaff	6993	------	------	60	27	43.7	1.6	72	20+	13	25	0	26	--	--	1.34	.08	.69	4	1	7.1	3	----	---	--	---	--	10	10	10	5.1	--
Phoenix	1109	972.9	1011.6	85	56	70.4	3.3	94	10+	45	25+	11	0	33	26	.00	-.35	.00	0	0	.0	0	7.0	E	*29	NE	2	15	6	9	4.3	96
Prescott	5014	845.9	1013.3	71	38	54.7	1.8	82	20+	24	25	0	6	21	32	.15	-.65	.12	4	0	.0	0	11.5	SSW	52	SW	23	15	8	7	3.9	86
Tucson	2584	924.1	1011.4	82	49	65.7	.7	93	10	34	25	8	0	24	23	.00	-.32	.00	0	0	.0	0	9.8	SSE	37	S	22	17	8	5	3.5	95
Winslow	4880	850.3	1011.8	73	38	55.4	1.4	85	21+	28	24	0	4	17	26	.23	-.26	.23	1	0	.0	0	12.5	SW	*43	SSW	23+	13	9	8	4.7	--
Yuma	199	1006.8	1011.9	91	58	74.2	1.4	101	18+	46	25	19	0	30	24	T	-.10	T	0	0	.0	0	7.6	S	28	NW	2	19	6	5	3.2	94
ARKANSAS																																
Fort Smith	458	998.3	1015.3	77	50	63.4	.8	93	6	35	4	1	0	47	58	1.70	-2.79	1.28	4	5	.0	0	9.5	NE	41	NW	17	10	6	14	5.8	64
Little Rock	257	1009.5	1016.1	76	54	64.9	2.4	89	23+	39	4	0	0	46	55	1.05	-4.11	.29	5	5	.0	0	9.7	SSE	28	W	20	13	7	10	5.3	70
Texarkana	361	------	1015.9	77	55	66.0	1.0	89	6	42	18+	0	0	--	--	1.05	-4.25	.45	7	5	.0	0	10.3	SSW	--	---	--	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	999.3	1017.7	75	50	62.4	-.6	90	6+	42	24	3	0	44	54	.77	.02	.56	5	0	.0	0	6.7	NW	*31	NNW	21	11	11	8	4.9	--
Bishop	4108	872.0	1012.2	75	38	56.8	2.1	89	20	25	23	0	4	--	--	.01	-.24	.01	1	0	.0	0	----	---	—	- -	--	14	10	6	4.0	--
Blue Canyon	5280	838.8	1016.3	52	35	43.7	-1.4	70	4	23	24+	0	11	--	--	3.89	-.76	1.28	13	2	20.8	8	8.1	SSW	34	ENE	1	3	8	19	7.3	--
Burbank	699	988.8	1015.0	76	52	64.4	3.9	90	5+	44	25+	3	0	42	49	1.53	.32	1.42	2	0	.0	0	6.9	SSE	*31	NNW	12	10	15	5	4.4	--
Eureka (U)	43	1017.6	1020.0	57	45	50.9	.3	66	7	37	24	0	0	--	--	2.92	.04	.56	18	0	.0	0	7.2	I N	26	NW	15+	2	5	23	8.1	44
Fresno	331	1005.1	1016.9	73	47	60.1	-1.4	88	6+	39	22	0	0	43	58	1.50	.54	1.00	3	0	.0	0	8.4	NW	28	NW	21	14	10	6	4.2	84
Long Beach	34	1014.9	1015.9	76	51	63.6	----	92	2	43	24	2	0	49	64	1.25	----	1.19	3	0	.0	0	7.5	W	*29	W	12	14	12	4	4.2	--
Los Angeles (U)	312	------	------	75	55	65.3	3.8	90	4+	48	25+	3	0	49	63	1.45	.28	1.37	2	0	.0	0	6.9	I W	31	W	12	13	12	5	3.9	83
Los Angeles	99	1011.9	1015.5	70	53	61.2	2.0	88	3+	46	25	0	0	49	59	2.00	1.04	1.88	2	0	.0	0	8.9	WSW	*28	WNW	12	13	11	6	4.6	--
Mt. Shasta (U)	3544	892.7	1017.6	58	32	44.9	-1.8	78	4	24	22	0	14	--	--	2.23	-.83	1.29	9	1	18.9	11	----	---	--	---	--	6	11	13	6.4	--
Oakland	3	1018.6	1018.9	66	48	57.0	1.4	83	4	40	24	0	0	46	69	.70	-.76	.58	4	1	.0	0	10.8	WNW	*35	WSW	6	12	10	8	4.8	--
Point Arguello (R)	367	1003.4	1016.9	63	46	54.2	----	83	3	37	17	0	0	--	--	1.73	----	1.38	6	0	.0	0	11.5	---	*30	NNW	29	15	[illegible]	7	4.4	--
Red Bluff	341	1004.4	1017.4	70	46	58.1	-1.9	87	4	39	22	0	0	39	54	2.36	.57	1.37	8	1	.0	0	10.6	WNW	38	SW	6	11	6	13	5.8	78
Sacramento	17	1016.6	1017.5	73	47	59.9	1.7	85	4	39	28	0	0	45	64	1.32	-.06	1.05	5	3	.0	0	8.4	SW	29	W	13	10	13	7	4.8	82
Sandberg (R)	4517	862.5	1014.6	61	41	51.0	.5	80	5	27	23	0	4	--	--	.94	.20	.80	6	0	.9	T	16.5	N	*60	N	15	14	11	5	4.0	--
San Diego	19	1012.2	1015.3	71	55	62.9	2.4	92	2	48	25	1	0	50	66	.56	-.27	.38	3	0	.0	0	7.0	WNW	31	S	27	16	10	4	4.0	75
San Francisco (U)	52	------	------	62	50	56.0	.3	80	4	45	23	0	0	--	--	1.16	-.33	.78	7	0	0	0	9.6	Φ W	36	W	21	--	--	--	----	84
San Francisco	8	1018.3	1019.0	64	47	55.8	1.7	81	4	39	24	0	0	47	76	.73	-.56	.59	7	0	.0	0	13.6	WNW	47	WNW	21	10	12	8	4.7	--
Santa Maria	238	1008.8	1017.6	68	44	56.2	.4	85	3	33	22	0	0	45	70	2.05	.85	1.60	5	0	.0	0	9.5	WNW	*30	W	21	16	10	4	3.5	--
COLORADO																																
Alamosa	7536	769.1	1013.5	60	26	42.9	1.2	73	21	12	25+	0	26	--	--	.39	-.15	.35	3	1	3.6	2	----	---	--	---	--	11	11	8	5.0	--
Colorado Springs	6173	808.3	1013.4	63	34	48.5	2.0	81	21+	21	2	0	14	21	40	.59	-.81	.25	6	3	2.4	1	12.6	N	*37	NW	16	8	11	11	5.7	--
Denver	5292	834.7	1012.2	64	37	50.5	3.0	85	21	22	30	0	9	21	39	2.56	.51	1.10	7	1	9.3	5	11.7	SSW	56	NW	16	10	10	10	5.8	65
Grand Junction	4849	857.4	1013.0	66	40	53.1	1.3	82	21+	27	25	0	4	20	32	.74	-.01	.38	3	1	T	T	10.4	ESE	56	S	23	11	11	8	5.0	84
Pueblo	4639	854.0	1011.9	69	38	53.5	3.7	87	21	26	3	0	7	27	40	.46	-.78	.39	3	2	.8	T	10.5	SE	66	W	16	10	10	10	5.5	76
CONNECTICUT																																
Bridgeport	7	1015.6	1016.4	60	40	50.0	3.7	85	25	27	11	0	2	39	70	2.12	-1.37	.93	7	3	T	T	10.0	ESE	--	---	--	5	9	16	6.9	--
Hartford	169	1009.5	1015.6	61	38	49.5	1.5	81	22	23	11	0	7	34	60	2.71	.15	1.29	15	3	T	T	9.2	S	37	SW	12	3	8	19	7.5	51
New Haven	6	1015.3	------	59	40	49.4	3.3	82	25	30	11+	0	5	--	--	2.90	-.99	1.01	16	5	.3	T	8.3	---	31	W	12	5	10	15	6.7	59
DELAWARE																																
Wilmington	78	1012.7	1016.1	68	44	56.4	4.6	89	25+	29	11+	0	2	42	64	2.93	-.71	1.34	8	2	T	T	10.6	WNW	32	WNW	12	4	12	14	6.7	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	73	49	61.0	6.3	96	23	32	11	5	1	--	--	3.23	.03	1.52	6	--	----	--	----	---	--	---	--	--	--	--	----	--
Wash. Nat'l. AP	14	1011.8	1016.3	73	50	61.2	6.8	95	23	33	11	5	0	42	54	3.15	.09	1.47	7	0	.0	0	12.0	SSW	38	NW	18	8	10	12	5.8	75
FLORIDA																																
Apalachicola (U)	13	1015.7	------	75	62	68.3	.8	85	28	49	11+	0	0	--	--	3.30	-.98	2.57	4	3	.0	0	8.5	---	33	SE	3	16	7	7	3.9	79
Daytona Beach	31	1017.1	1018.9	79	60	69.6	.6	88	2	48	6	0	0	61	78	.76	-2.17	.38	7	5	.0	0	9.8	ESE	*25	SSE	5	12	14	4	4.7	--
Fort Myers	15	1016.8	------	84	61	72.6	-.4	89	30	45	11	0	0	--	--	3.83	1.46	1.36	10	7	.0	0	7.5	---	*23	ESE	23+	10	16	4	4.9	--
Jacksonville	24	1016.8	1018.8	81	59	69.9	1.5	89	27	41	11	0	0	57	72	3.54	.20	2.79	8	4	.0	0	9.7	SE	29	SW	4+	13	11	6	4.3	71
Key West	5	1015.5	------	81	71	76.2	-.8	86	27+	63	11+	0	0	--	--	1.02	-1.38	.42	9	3	.0	0	11.6	---	34	SE	20	5	15	10	5.9	75
Lakeland (U)	214	------	------	81	63	71.7	.1	87	30	48	11	0	0	--	--	3.22	.35	1.07	10	10	.0	0	8.0	---	--	---	-	9	11	10	5.1	74
Maimi	7	1016.0	1017.3	81	68	74.4	-.5	88	28	55	11	0	0	63	72	10.21	6.22	5.18	9	5	.0	0	11.0	E	28	NE	11	5	15	10	6.2	--
Orlando	106	1014.1	1018.7	83	61	72.0	.4	89	22	47	11	0	0	60	72	2.55	-.41	1.26	9	7	.0	0	9.9	E	*28	SSW	5	8	15	7	5.2	--
Pensacola (U)	13	------	------	75	61	67.9	.9	83	28+	49	12+	0	0	--	--	7.68	2.78	3.85	5	3	.0	0	†11.5	---	41	NW	3	--	--	--	----	67
Tallahassee	64	1015.1	1017.9	79	57	68.1	.9	88	25	37	11	0	0	55	70	7.19	2.70	3.36	5	6	.0	0	6.8	SE	*25	SSE	3	12	9	9	4.9	--
Tampa	19	1016.6	1018.3	83	63	73.3	1.8	90	20	46	11	1	0	61	71	1.66	-.85	.87	5	5	.0	0	10.0	ENE	*25	E	18+	8	17	5	5.1	77
West Palm Beach	15	1016.8	1018.0	82	66	73.5	-.3	89	27	52	7	0	0	63	71	5.99	1.86	2.78	12	7	.0	0	12.6	E	*28	NE	19	4	15	11	6.5	--
GEORGIA																																
Athens	798	989.2	1018.4	75	50	62.8	1.1	89	25+	30	10	0	2	49	66	3.34	-1.25	.82	8	1	.0	0	8.0	S	*23	WNW	5	11	7	12	5.4	--
Atlanta	975	976.2	1017.9	74	53	63.7	2.0	86	26+	33	10	0	0	48	61	4.59	.17	2.12	7	3	.0	0	10.0	S	*25	WNW	5	9	9	12	5.7	64
Augusta	143	1010.9	1017.8	78	51	64.7	1.5	91	24	30	11	3	1	52	68	4.01	.53	2.28	8	3	.0	0	6.1	SE	*24	W	5	10	9	11	5.3	--
Columbus	385	1003.6	------	78	52	64.7	1.3	89	26+	31	11	0	1	--	--	5.90	1.67	2.37	9	5	.0	0	7.3	---	*35	NNW	3	11	9	10	5.4	--
Macon	356	1004.1	1017.9	79	54	66.7	1.0	92	26	33	11	3	0	51	63	3.29	-.52	1.82	6	4	.0	0	9.0	SSE	34	SE	3	13	7	10	5.1	67
Rome	637	990.5	------	75	47	61.1	.6	88	25+	23	11	0	3	--	-	3.58	-1.04	1.45	9	5	.0	0	5.1	- -	--	-	—	9	10	11	5.3	--
Savannah	48	1016.0	1018.6	78	55	66.5	.8	87	26+	34	11	0	0	53	70	3.68	1.21	1.93	5	5	.0	0	8.2	SSE	29	SW	3	13	9	8	4.7	74
Thomasville	283	------	------	80	58	69.0	1.6	90	25	38	11	1	0	--	--	7.69	3.39	2.14	7	7	.0	0	----	---	--	---	--	--	--	--	----	--
HAWAII																																
Hilo	31	1016.3	1017.6	79	66	72.0	.4	83	29	62	9	0	0	65	82	15.04	1.77	3.08	28	0	.0	0	8.5	WSW	*23	E	14	0	8	22	8.1	23
Honolulu	7	1017.6	1018.1	81	69	74.9	.6	85	30+	64	3	0	0	62	66	.01	-1.63	.01	1	0	.0	0	11.2	ENE	33	NE	24+	6	19	5	5.3	79

See footnotes at end of table.

CLIMATOLOGICAL DATA

		Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
State and station	Elevation (ground)	Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	No. of days .01 inch or more	With thunderstorms	Snow, Sleet Total	Max. depth on ground	Average hourly speed	Prevailing direction	Fastest mile Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
HAWAII (Cont'd.)																																
Lihue	115	1013.9	1019.1	79	67	73.4	1.4	83	30	62	29+	0	0	64	74	1.16	-1.87	0.40	14	0	0.0	0	14.5	NE	29	NE	25	2	14	14	7.1	48
IDAHO																																
Boise	2842	919.1	1015.7	62	36	49.0	-.9	80	5	20	16	0	9	31	54	.43	-.67	.20	6	0	T	0	9.0	NW	29	NNW	15	10	5	15	6.3	66
Idaho Falls 46W (R)	4933	846.3	1014.6	59	30	44.3	1.8	75	5	17	17+	0	18	--	--	.45	-.30	.35	3	0	3.0	2	10.5	WSW	a38	SW	14	--	--	--	----	--
Idaho Falls 42NW (R)	4790	------	------	59	28	43.7	1.3	76	6+	11	17	0	23	--	--	.72	.13	.64	4	--	---	--	6.1	SW	a27	SW	20+	--	--	--	----	--
Lewiston	1413	964.4	1016.3	62	39	50.6	-.8	76	7+	31	22	0	3	--	--	1.31	.17	.33	13	3	T	0	----	---	--	---	--	6	8	16	6.8	--
Pocatello	4444	860.8	1014.7	59	34	46.6	.3	77	5	24	16	0	12	28	51	.66	-.66	.45	5	0	2.8	2	15.3	SW	56	SW	14	9	6	15	6.2	72
ILLINOIS																																
Cairo (U)	314	1002.7	------	73	52	62.3	2.3	86	24	32	10	0	1	--	--	3.10	-.86	1.21	9	9	.0	0	10.7	⊕ S	35	SW	11	7	17	6	5.3	75
Chicago (O'Hare)	656	988.5	1013.3	62	43	52.1	----	86	23	24	10	0	7	39	67	3.02	----	1.64	8	3	T	0	14.1	SSW	*40	NW	16	5	9	16	7.2	--
Chicago (Midway)	610	990.5	1013.4	63	43	53.4	5.3	88	23	26	10+	0	6	39	63	3.14	.32	1.30	11	5	T	0	13.9	SW	41	W	11	4	9	17	7.1	65
Moline	589	990.5	1013.2	63	44	53.4	3.5	86	23	21	10	0	4	42	69	4.89	1.88	1.52	12	6	T	0	11.9	S	34	SE	1	5	8	17	7.0	55
Peoria	654	991.5	1014.1	63	43	53.0	2.5	84	24+	21	10	0	6	42	69	3.55	.11	.99	12	6	T	0	13.7	S	42	NW	17	4	11	15	7.1	56
Rockford	728	985.8	1013.2	61	41	50.8	3.5	85	23	20	10	0	7	40	69	5.84	2.84	2.04	10	6	T	0	12.1	S	*35	W	11+	4	13	13	6.6	--
Springfield	589	990.9	1014.3	67	46	56.2	4.5	86	24+	25	10	0	3	44	66	4.43	1.01	1.83	12	7	.0	0	15.4	SSW	56	W	17	5	9	16	7.0	61
INDIANA																																
Evansville	383	1000.0	1015.8	71	46	58.5	1.4	86	25+	25	10	0	4	43	59	2.75	-1.04	1.25	7	7	T	T	11.9	SSW	38	W	29	7	12	11	6.3	75
Fort Wayne	801	983.4	1015.0	63	41	52.1	4.3	85	25	23	10	0	7	40	66	1.80	-1.45	.83	10	3	.4	T	12.1	SW	50	SW	30	4	8	18	7.1	70
Indianapolis	793	985.1	1015.3	66	43	54.8	4.0	87	24	25	10	0	6	40	60	2.05	-1.80	.85	9	4	T	0	10.4	SW	42	NW	8	6	8	16	7.0	68
South Bend	768	985.4	1013.8	61	40	50.8	3.5	86	23	19	10	0	7	39	68	2.70	-.70	.97	8	4	.7	T	12.7	SSW	*29	NW	17+	3	10	17	7.2	--
IOWA																																
Burlington	694	988.5	1014.4	64	43	53.7	2.7	85	22	20	10	0	6	41	67	4.11	.68	1.18	14	8	T	0	13.6	SSW	52	W	16	6	9	15	6.8	65
Des Moines	948	982.4	1013.5	62	42	51.9	1.5	88	22	22	9	0	7	40	67	2.40	-.05	.90	12	5	2.2	1	14.4	S	44	N	17	5	9	16	7.1	59
Dubuque	1065	987.5	1013.4	59	39	48.9	2.0	83	23	20	10	0	9	37	64	4.91	2.22	2.58	13	6	1.7	1	----	---	--	---	--	5	11	14	6.9	--
Sioux City	1094	971.2	1012.7	62	38	50.0	.8	94	22	22	9	1	9	37	65	2.64	.50	1.40	9	3	.7	T	14.6	NW	43	N	20	7	10	13	6.6	67
Waterloo	870	980.0	1012.2	60	38	49.3	1.1	87	22	18	10	0	7	38	70	5.71	3.32	2.39	12	6	3.0	2	13.9	NW	*46	NNW	16	7	6	17	7.0	--
KANSAS																																
Concordia (U)	1375	963.8	------	66	46	56.3	2.3	86	24	31	3	0	3	--	61	1.83	-.43	.65	10	5	.9	1	10.8	⊕ S	29	NW	20	12	9	9	5.2	70
Dodge City	2594	924.8	1012.4	70	44	57.2	3.4	88	21	30	3	0	2	39	56	1.82	-.44	.51	9	8	.0	0	19.0	SSE	56	N	16	10	10	10	5.3	80
Goodland	3645	885.2	1011.8	67	37	51.9	4.7	85	21+	28	30+	0	8	31	52	.83	-.98	.37	8	3	T	T	15.7	NNW	*53	NNW	1	5	11	14	6.3	--
Topeka	877	980.7	1013.0	67	45	56.1	1.6	85	24	30	9	0	3	41	60	2.23	-1.27	1.13	8	4	T	0	15.3	S	40	S	22+	2	15	13	6.8	56
Wichita	1321	964.1	1012.6	70	48	59.1	2.9	86	22+	32	3	0	1	42	57	1.28	-2.24	1.01	4	4	T	0	16.9	S	43	NW	16	5	14	11	6.3	60
KENTUCKY																																
Lexington	979	980.9	1017.0	70	47	58.1	3.6	86	24	24	10	0	4	43	61	1.65	-2.11	.77	7	2	T	T	9.9	S	--	---	--	5	13	12	6.4	--
Louisville	474	996.7	1016.1	73	48	60.6	4.6	91	24+	30	10	2	4	43	56	1.17	-2.84	.42	9	3	T	0	10.1	SW	36	S	17	6	11	13	6.3	59
LOUISIANA																																
Alexandria	107	1011.9	1016.5	79	54	66.4	----	87	28	40	19+	0	0	56	73	2.11	----	.58	7	4	.0	0	7.2	S	--	---	--	7	10	13	5.9	--
Baton Rouge	64	1013.9	1017.2	81	58	69.6	2.8	87	23	46	11	0	0	58	71	2.18	-2.32	1.30	7	7	.0	0	9.3	SE	--	---	--	8	12	10	5.6	--
Lake Charles	12	1014.9	1016.6	78	59	68.4	.4	86	28	50	5+	0	0	58	73	5.92	1.65	4.67	6	4	.0	0	10.9	S	*35	SE	29+	8	7	15	5.9	--
New Orleans (U)	9	------	------	79	63	71.0	1.2	86	28	54	11	0	0	--	72	6.93	1.48	3.30	9	7	.0	0	6.0	---	29	NE	3	9	13	8	5.0	54
New Orleans	3	1014.6	1017.0	79	56	67.5	.8	86	29+	41	11	0	0	60	80	5.69	.29	2.48	8	8	.0	0	9.1	SSE	*35	ENE	3	9	10	11	5.2	--
Shreveport	252	1006.8	1016.2	79	56	67.3	.2	89	6	44	19	0	0	51	61	1.39	-3.20	.82	6	4	.0	0	12.3	SSE	--	---	--	10	7	13	5.5	71
MAINE																																
Caribou	624	990.1	1013.5	44	26	34.9	.2	64	30	9	11	0	29	28	78	2.96	.33	.79	9	0	11.0	16	11.1	WSW	*35	WSW	19	6	10	14	6.5	--
Portland	61	1010.8	1014.9	52	33	42.4	.5	73	15	20	11	0	11	34	76	3.23	-.52	1.01	15	2	T	1	9.8	S	37	SW	12	6	6	18	7.0	51
MARYLAND																																
Baltimore (U)	14	------	------	72	51	61.7	7.4	95	23	35	11	5	0	--	--	3.85	.13	1.43	6	--	.0	0	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1011.4	1016.3	72	45	58.4	6.0	94	25+	26	11	4	2	42	59	3.40	-.32	1.38	6	1	.0	0	11.2	WNW	37	W	9	9	10	11	5.5	66
Frederick	294	------	------	70	42	55.8	2.9	93	23	25	11	4	3	--	--	2.88	-.62	1.08	7	--	.0	0	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.	629	990.6	------	56	36	46.4	----	75	15	25	11	0	10	--	53	3.36	-.63	1.13	14	--	.0	0	14.3	---	49	S	4	--	--	--	----	47
Boston	15	1010.1	1014.9	56	40	48.3	1.1	78	15	31	11	0	1	36	69	3.51	.05	1.40	14	1	T	T	12.2	WNW	40	W	12	5	9	16	7.4	53
Nantucket	43	1015.2	1015.7	50	38	44.1	.5	68	22	29	8	0	3	37	79	2.55	-.90	1.35	13	4	.1	0	14.5	SSW	35	N	29+	4	5	21	7.8	54
Pittsfield	1170	------	------	57	36	46.6	4.6	77	17+	22	11+	0	11	--	--	5.12	1.51	1.13	16	--	1.6	---	----	---	--	---	--	--	--	--	----	--
Worcester	986	977.1	1014.6	56	36	46.0	2 2	74	14	23	11	0	12	33	65	4.57	1.08	1.17	15	3	1.5	0	9.3	W	*28	WNW	12	3	11	16	7.4	--
MICHIGAN																																
Alpena	689	987.5	------	51	30	40.5	-.2	79	22	16	10	0	21	33	71	3.17	.59	.92	18	5	1.0	2	7.6	SE	27	SE	2	4	3	23	8.0	34
Detroit (City AP)	619	987.5	1014.4	60	41	50.6	4.2	86	24+	25	10	0	7	38	65	2.06	-.85	.67	14	3	T	T	11.8	WNW	42	SW	11	4	6	20	7.7	42
Detroit (M. Wayne Co.)	630	989.8	1014.3	60	39	49.6	----	85	24	23	6	0	8	39	70	1.80	----	.67	15	6	.1	T	12.3	SW	--	---	--	4	6	20	7.6	--
Detroit (Willow Run)	722	985.1	1013.9	61	40	50.3	3.7	85	24	24	10	0	7	39	67	1.50	-1.44	.52	11	6	.7	T	12.9	SW	*40	WSW	30+	4	5	21	7.7	--
Escanaba (U)	594	989.2	------	47	33	40.2	2.0	69	22	19	10	0	13	--	79	4.05	1.95	1.05	21	5	4.5	2	10.8	---	31	N	17	5	4	21	7.8	42
Flint	761	985.8	1013.8	58	37	47.5	3.1	85	23	21	6	0	11	38	73	2.62	.01	1.10	14	4	1.9	1	11.0	SW	*28	S	30	2	5	23	8.3	--
Grand Rapids	681	988.2	1013.5	59	39	48.9	4.1	83	23+	20	10	0	10	38	68	2.64	-.26	.65	13	4	1.0	T	11.7	WNW	43	SW	11	3	6	21	7.8	48
Lansing	852	981.0	1013.6	59	38	48.7	3.4	86	23	21	10+	0	12	38	71	2.80	-.03	.91	12	3	.8	T	14.8	SSE	50	NW	25	4	6	20	8.0	42
Marquette (U)	677	984.4	------	47	33	40.0	1.3	67	16	20	10+	0	13	--	71	5.73	3.22	1.85	21	3	14.2	13	9.4	⊕ W	32	SW	20	6	4	20	7.6	43
Muskegon	627	990.2	1013.4	56	38	46.8	3.2	78	23+	18	10	0	11	38	74	3.00	.66	.71	12	5	3.7	2	12.0	SSW	*40	SSW	30	4	8	18	7.2	--
Sault Ste. Marie	721	989.5	1012.6	46	30	37.6	.8	68	23	15	6	0	19	31	80	3.33	1.38	.65	17	5	4.7	4	10.4	ESE	*29	W	11	4	7	19	7.9	40
MINNESOTA																																
Duluth	1409	970.5	1012.5	48	30	38.6	1.8	71	21	12	9	0	20	27	69	3.80	1.30	1.51	15	4	1.8	5	16.0	ENE	52	NW	11	2	9	19	7.9	47
Intern'l Falls	1179	970.2	1012.2	47	27	36.8	-.4	70	19	11	10	0	21	25	66	2.03	.30	.45	15	0	9.7	8	10.6	NW	*52	SW	13	5	10	15	6.9	--
Minneapolis	830	978.3	1012.5	57	35	45.9	-.1	85	22	20	9	0	10	35	69	2.04	.13	.69	9	3	T	T	12.9	NW	42	NW	11	4	11	15	7.1	45
Rochester	1017	974.9	1012.8	57	36	46.0	1.0	85	22	17	10+	0	13	35	69	2.11	-.20	.88	9	6	.2	T	14.3	WNW	--	---	--	4	10	16	7.1	--
St. Cloud	1034	973.9	1012.7	53	32	42.2	-.7	75	22+	14	9	0	19	30	66	1.81	-.15	.65	10	3	T	T	----	---	--	---	--	5	6	19	7.2	--
MISSISSIPPI																																
Jackson	305	1004.7	1015.7	78	54	66.1	1.2	86	24+	41	19+	0	0	52	64	1.46	-3.36	.46	7	5	.0	0	7.3	SSE	22	SW	6	11	11	8	4.8	68
Meridian	292	1002.5	1017.5	79	51	65.2	.9	90	24+	32	11	2	1	52	69	2.80	-2.66	1.73	6	3	.0	0	7.0	SSW	*22	WSW	7+	9	14	7	5.2	--
Vicksburg (U)	234	1007.5	------	77	57	66.8	1.0	85	22	46	10	0	0	--	--	1.03	-3.81	.33	8	3	.0	0	8.3	---	30	SW	29	8	12	10	5.4	69
MISSOURI																																
Columbia	778	984.4	1013.4	68	47	57.3	2.8	87	22	25	10	0	2	42	62	5.07	1.27	1.72	11	10	.0	0	13.3	S	54	SW	17	6	6	18	7.0	52
Kansas City	741	978.3	1013.1	67	49	58.2	2.4	87	24	33	30+	0	0	41	55	3.78	.17	1.96	9	8	1.7	1	12.2	S	41	SW	1	4	12	14	6.9	61
St. Joseph	809	978.0	------	66	45	55.4	.9	86	22	30	10	0	2	--	--	2.04	-1.31	.96	10	7	.5	T	16.5	---	*40	WSW	16	6	14	10	6.2	--
St. Louis (RFC)	465	------	------	69	49	59.1	2.6	88	24	31	10+	0	2	--	--	2.26	-1.75	.92	8	--	.0	0	----	---	--	---	--	--	--	--	----	--
St. Louis	552	993.9	1014.8	70	48	58.9	3.3	91	23	26	10	1	2	44	60	3.11	-.82	.87	11	8	.0	0	13.2	S	45	S	1	8	9	13	6.1	59
Springfield	1265	967.2	1014.8	69	46	57.5	2.0	84	22	28	10	0	1	41	59	2.42	-1.92	1.38	8	6	T	T	15.3	SSE	50	S	29	2	17	11	6.4	58

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground) Ft	Pressure: Station Mb.	Pressure: Sea level Mb.	Temperature: Average maximum °F.	Average minimum °F.	Average °F.	Departure from normal °F.	Highest °F.	Date	Lowest °F.	Date	No. of days: Max. 90° F. or above	No. of days: Min. 32° F. or below	Average dew point °F.	Average relative humidity %	Precipitation: Total In.	Departure from normal In.	Greatest in 24 hours In.	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total In.	Max. depth on ground In.	Wind: Average hourly speed M p h	Prevailing direction	Fastest mile: Speed M. p. h.	Direction	Date	No. of days (sunrise to sunset): Clear 0–3	Partly cloudy 4–7	Cloudy 8–10	Sky cover, (tenths sunrise to sunset) 0–10	Possible sunshine %
MONTANA																																
Billings	3567	889.6	1014.6	56	33	44.8	-1.4	80	5	23	25	0	15	25	51	1.00	-0.05	0.41	8	1	4.8	2	12.5	SW	44	NW	14	3	8	19	7.7	56
Butte	5530	827.6	1017.0	49	24	36.5	-1.7	68	5	12	25	0	27	23	--	1.10	.06	.45	10	1	9.8	5	9.1	WNW	*29	WNW	15	3	6	21	7.9	-
Glasgow	2277	939.4	1014.7	53	32	42.5	-1.9	66	9	18	26	0	15	24	55	.72	-.28	.35	6	0	5.3	5	----	---	--	---	-	5	12	13	6.9	--
Great Falls	3664	886.9	1014.9	53	33	42.8	-1.5	75	4	19	26	0	16	22	51	2.13	1.18	.89	10	1	16.2	10	13.0	SW	47	SW	14	4	6	20	7.2	55
Havre (U)	2488	924.8	1014.6	55	33	44.3	-.8	73	5+	27	30+	0	15	--	--	2.82	1.92	.85	9	1	9.6	7	10.7	Φ SW	42	SW	14	6	11	13	6.6	61
Helena	3893	872.0	1015.9	53	31	42.1	-1.1	77	5	19	29	0	19	25	54	1.56	.68	.68	10	2	20.0	8	11.2	W	40	W	14	5	7	18	7.3	60
Kalispell	2965	------	------	55	32	43.0	-.7	73	5	23	29	0	20	--	--	.82	-.20	.22	12	0	3.6	2	----	---	--	---	--	5	6	19	7.2	--
Miles City	2629	930.2	1015.1	57	34	45.6	-.4	80	5	22	30	0	13	27	--	.72	-.36	.50	3	0	1.0	1	12.0	NW	*35	NW	10	2	13	15	7.4	--
Missoula	3200	901.5	1017.2	56	32	43.6	-1.1	78	5	23	17	0	19	31	64	.72	-.18	.15	13	0	2.3	1	8.4	NW	29	W	14	6	4	20	7.4	45
NEBRASKA																																
Grand Island	1841	946.2	1012.4	65	40	52.0	1.1	90	22	27	5+	1	10	37	60	2.72	.50	1.51	7	0	3.2	3	14.5	SSW	--	---	--	8	10	12	6.3	-
Lincoln (U)	1166	------	------	65	44	54.2	1.6	91	22	29	9	2	6	--	--	2.02	-.27	.68	7	1	.5	T	13.8	Φ NW	53	S	19	9	12	9	5.5	71
Norfolk	1544	956.0	1012.0	61	37	49.0	.7	92	22	20	3	1	11	35	58	2.53	.25	1.63	7	4	4.2	4	----	---	--	---	--	6	13	11	6.3	--
North Platte	2779	912.6	1011.8	64	36	49.7	1.0	88	22	24	30	0	12	33	58	1.77	-.29	.78	8	3	2.2	1	14.1	NNW	50	N	2	5	10	15	7.0	62
Omaha	978	972.2	1012.5	64	42	53.2	1.0	92	22	27	9	1	4	38	61	1.99	-.16	.80	7	1	T	0	16.3	SSE	50	N	17	6	13	11	6.2	62
Omaha N.Omaha AP	1323	964.1	------	62	41	51.6	1.6	91	22	25	9	1	7	--	--	2.02	-.13	.79	7	2	.3	T	----	---	--	---	--	5	14	11	6.7	--
Scottsbluff	3950	876.1	1012.5	63	34	48.3	2.2	86	10	24	17	0	12	29	52	.96	-1.03	.35	6	3	3.6	1	14.9	NW	*46	NW	19	7	8	15	6.7	--
Valentine	2587	921.4	------	59	33	46.4	-.1	84	21	21	9	0	14	--	65	2.56	.59	.96	9	4	6.1	5	12.3	Φ N	41	N	20	8	8	14	6.5	57
NEVADA																																
Elko	5075	843.6	1014.9	60	29	44.5	-.1	78	5	16	16	0	19	24	49	.94	.01	.46	8	2	1.3	1	6.1	SW	*26	W	21+	7	12	11	6.1	--
Ely	6257	807.0	1013.6	60	26	43.2	-.5	76	6+	10	25	0	23	21	42	.67	-.53	.43	7	2	4.5	1	11.9	S	57	S	22	10	11	9	5.5	73
Las Vegas	2162	946.2	1011.0	80	52	66.0	.4	94	5	37	25	6	0	19	20	.10	-.14	.10	1	1	.0	0	12.0	SSW	*40	SSW	23+	18	8	4	3.3	88
Reno	4404	861.2	1015.5	66	30	48.2	.5	80	6+	21	16	0	21	29	50	.05	-.41	.05	1	0	.6	1	8.1	WNW	47	W	6	8	9	13	6.0	89
Winnemucca	4299	867.3	1015.9	64	27	45.4	-1.4	80	5	10	16	0	22	23	44	.47	-.36	.34	3	0	.6	T	8.1	W	42	SW	21	6	9	15	6.9	57
NEW HAMPSHIRE																																
Concord	339	1004.0	1015.1	57	34	45.2	2.2	75	15	18	11	0	12	35	73	4.59	1.51	1.22	14	2	T	1	7.3	NW	28	W	12	3	13	14	7.1	47
Mt. Washington	6262	802.2	------	33	19	26.3	4.3	48	17	-1	10	0	29	--	84	4.79	-1.08	.95	18	0	11.4	5	36.3	---	‡122	WNW	12	2	9	19	7.7	40
NEW JERSEY																																
Atlantic City (U)	30	------	------	61	45	52.9	3.5	91	25	30	11	1	2	--	--	2.13	-1.27	.72	6	--	----	--	11.9	---	34	W	12	--	--	--	----	73
Atlantic City	58	1013.0	1016.3	66	44	55.2	5.1	89	25	27	11	0	2	42	66	2.34	-.99	.86	6	1	T	0	13.0	S	32	NW	18	5	16	9	6.2	--
Newark	11	1014.5	1015.9	65	44	54.8	4.8	91	25	32	11	1	1	40	61	3.09	-.18	1.41	10	3	T	T	10.5	WNW	*30	WNW	12	4	13	13	6.6	--
Trenton (U)	56	1008.2	------	67	44	55.7	5.0	89	25+	32	11	0	1	--	--	2.45	-.55	1.03	9	4	T	T	10.0	---	38	NW	25	6	14	10	5.8	75
NEW MEXICO																																
Albuquerque	5310	846.6	1010.5	73	43	57.9	2.4	84	10+	31	2	0	2	17	24	.19	-.34	.14	3	0	.0	0	8.7	S	38	NW	16+	13	10	7	4.6	72
Clayton	4969	843.2	1010.8	69	38	53.6	2.6	85	21	25	30	0	6	--	--	.82	-.31	.50	2	1	2.4	T	----	---	--	---	--	11	13	6	4.7	--
Raton	6379	802.9	1012.2	67	30	48.5	1.6	82	21	14	3	0	17	--	--	.35	-.73	.32	2	0	T	T	----	---	--	---	--	11	7	12	5.5	--
Roswell	3612	890.3	1010.2	81	43	62.4	2.7	96	21	30	3	5	1	26	28	T	-.75	T	0	0	.0	0	13.4	---	57	W	12	15	6	9	4.4	--
NEW YORK																																
Albany	277	1011.1	1014.9	60	39	49.6	4.5	82	14	25	11	0	6	37	65	4.19	1.58	1.30	16	3	.1	T	11.6	SSE	42	W	12	2	5	23	8.0	58
Binghamton	1590	956.2	1014.5	57	39	48.2	5.6	82	24	23	11	0	9	37	69	3.02	-.22	1.10	14	3	12.7	9	9.6	NW	49	W	12	1	7	22	8.3	48
Buffalo	693	986.3	1014.9	58	39	48.4	4.6	77	17	26	6	0	10	43	72	2.34	-.21	.67	18	2	1.9	T	12.2	SW	42	W	18+	1	9	20	8.1	48
New York (U)	10	1014.5	------	62	45	53.3	3.5	86	25	34	11+	0	0	--	--	3.18	-.04	1.38	12	2	T	T	13.5	---	45	W	12	5	16	9	6.0	65
New York	19	1014.0	1015.9	63	45	54.1	4.0	88	25	35	11	0	0	39	62	2.81	-.29	1.29	13	4	T	0	12.4	S	38	NW	18	5	12	13	6.7	--
Rochester	543	995.1	1014.7	58	39	48.6	4.1	83	24	24	6	0	8	39	73	1.87	-.77	.40	18	5	.7	1	12.2	WSW	56	W	18	1	8	21	8.2	46
Schenectady	217	------	------	60	41	50.3	5.2	81	14	29	7	0	6	--	--	3.99	.94	1.61	16	--	T	0	----	---	--	---	--	13	13	4	4.1	--
Syracuse	424	992.2	1014.5	59	40	49.5	3.5	86	17	25	7	0	8	38	69	2.94	-.18	.87	22	3	1.6	T	11.4	WNW	42	W	18	2	6	22	8.0	42
NORTH CAROLINA																																
Asheville (U)	2203	938.3	------	71	46	58.2	2.7	88	25+	24	11	0	3	--	--	2.76	-.10	1.39	10	2	.2	T	8.2	---	29	NW	18	11	10	9	5.1	66
Cape Hatteras	7	1016.9	1017.8	69	56	62.4	2.8	79	23	43	11	0	0	54	77	4.88	1.80	3.92	7	6	.0	0	12.9	SW	42	SW	5	13	8	9	4.7	76
Charlotte	725	989.7	1017.6	76	50	63.2	3.5	93	24	30	11	4	2	49	60	3.20	.03	.91	9	2	.0	0	10.1	S	45	NW	5	11	10	9	5.1	72
Greensboro	891	985.8	1018.0	74	47	60.7	3.6	91	25	25	11	3	2	44	60	4.30	.95	1.37	10	2	T	T	9.9	SW	38	NW	5	12	9	9	4.8	78
Raleigh	433	1003.5	1017.5	76	49	62.1	3.6	93	24	27	11	4	2	47	62	4.57	1.04	1.97	8	2	.0	0	8.1	SSW	*22	NNW	5	13	9	8	4.8	78
Wilmington	30	1016.9	1018.0	76	54	64.9	2.7	90	25+	35	11	2	0	54	74	3.15	.44	1.78	7	2	.0	0	10.7	SSW	35	SW	25+	11	9	10	5.0	60
Winston-Salem	967	982.0	1017.4	75	49	61.9	4.4	92	25	29	11	4	2	42	54	4.17	.77	1.38	9	2	.0	0	11.0	SW	*38	WSW	5	14	9	7	4.5	--
NORTH DAKOTA																																
Bismarck	1650	953.3	1014.4	57	33	45.2	2.1	82	14	18	9	0	16	28	57	.41	-.98	.34	5	0	2.2	2	16.7	WNW	53	W	13	6	11	13	6.5	63
Devils Lake (U)	1471	959.4	------	48	30	38.7	-1.3	66	21	12	9	0	19	--	67	1.00	-.44	.37	11	0	7.3	4	12.1	Φ NW	42	W	13	7	10	13	6.3	62
Fargo	895	978.7	1013.8	51	31	41.2	-.9	76	21	14	9	0	18	31	70	3.62	1.74	1.62	10	1	7.9	6	18.2	N	47	NW	7	3	12	15	7.2	51
Williston (U)	1877	946.2	1014.7	53	33	42.6	-.3	72	14	19	26	0	15	26	56	1.11	.04	.43	6	0	4.2	2	9.5	Φ NW	41	NW	13	5	11	14	6.8	51
OHIO																																
Akron	1210	977.2	1014.6	63	42	52.5	5.4	85	25+	19	10	0	7	40	68	1.79	-1.41	.58	12	4	1.7	1	12.1	SW	--	---	--	3	6	21	7.7	-
Cincinnati Obs.	761	------	------	70	47	58.8	5.2	89	24+	25	10	0	3	--	--	1.36	-2.28	.63	9	3	T	0	7.5	---	26	W	17	--	-	--	-- -	63
Cincinnati	869	983.9	1016.1	70	46	57.7	5.6	88	24	25	10	0	4	40	55	1.32	-2.27	.57	8	1	T	T	11.6	SSW	*30	SW	17	2	10	18	7.4	--
Cleveland	787	986.6	1014.8	63	39	51.0	3.7	85	24	25	6	0	9	40	71	2.78	.05	1.21	11	5	.5	T	14.8	S	34	W	16	3	4	23	8.0	52
Columbus (U)	724	------	------	66	45	55.8	4.4	87	24	26	10	0	6	--	--	1.56	-1.63	.62	10	3	.1	0	----	---	--	---	--	--	--	--	----	--
Columbus	815	985.5	1015.8	67	43	55.3	5.1	88	25+	25	10	0	6	42	62	1.60	-1.84	.70	11	3	T	0	10.0	SSW	38	SW	30	2	11	17	7.4	53
Dayton	1002	979.0	1015.7	66	43	54.7	4.2	87	24	23	10	0	7	40	60	1.18	-1.89	.39	11	2	.5	T	13.1	SSW	56	W	17	2	10	18	7.2	63
Mansfield	1296	------	------	62	42	52.4	----	85	24	22	10	0	7	--	--	2.07	----	.84	13	3	1.0	T	----	---	--	---	--	3	7	20	7.7	--
Sandusky (U)	603	993.0	------	63	43	52.7	4.8	88	24	26	6	0	6	--	--	2.11	-.85	.58	11	6	T	T	9.8	---	42	SW	11	7	11	12	6.1	58
Toledo	676	989.1	1014.8	63	38	50.3	3.8	87	24	23	10+	0	9	41	72	1.62	-1.63	.60	9	4	T	0	9.3	WSW	32	NW	17	5	6	19	7.5	46
Youngstown	1178	972.3	1015.2	63	41	52.2	5.0	85	24	21	6	0	9	40	67	1.35	-2.29	.39	9	3	2.6	1	12.5	SW	*30	SSW	21	3	4	23	7.0	--
OKLAHOMA																																
Oklahoma City	1280	970.5	1014.1	73	50	61.7	1.4	92	6	36	3	1	0	45	58	3.01	-.16	1.97	4	5	.0	0	15.6	SSE	75	NW	28	7	9	14	5.8	57
Tulsa	672	989.5	1014.2	73	48	60.7	.0	92	6	35	18+	1	0	45	59	3.63	-.62	1.66	6	6	.0	0	11.3	SSE	35	W	28	6	9	15	6.3	46
OREGON																																
Astoria	8	1016.6	1016.9	57	42	49.1	-.6	68	5	31	10	0	2	43	82	5.92	.77	1.09	23	1	.0	0	7.8	SW	*29	SW	13	0	3	27	9.0	--
Burns (U)	4140	872.3	1015.9	57	31	44.0	-2.6	77	5	18	23	0	18	30	58	.43	-.39	.20	5	0	.1	T	----	---	--	---	--	5	9	16	6.9	--
Eugene	361	1004.1	1017.8	61	40	50.4	-.5	76	4	30	23+	0	3	--	--	3.29	.75	.58	17	3	.0	0	8.6	---	*40	W	13	0	8	22	8.4	--
Meacham	4050	------	------	50	33	41.4	.3	68	4	24	22	0	17	--	--	2.61	-.12	.59	18	0	9.3	2	----	---	--	---	--	5	7	18	7.4	--
Medford	1312	970.2	1018.2	63	39	51.1	-1.2	83	4	28	16	0	2	40	69	.67	-.52	.18	11	2	T	0	5.7	N	*29	SSW	13+	2	8	20	7.8	--
Pendleton	1492	962.1	1016.0	63	40	51.7	-.6	79	4	32	22+	0	2	37	60	.80	-.24	.23	11	0	T	T	11.5	W	*77	W	13	5	9	16	6.9	--
Portland	21	1011.5	1017.2	60	41	50.6	-1.2	77	6	33	10	0	0	42	73	3.33	1.22	.71	19	0	.0	0	8.4	E	47	SW	13	0	5	25	8.7	34
Roseburg	505	999.3	1018.3	64	40	51.8	.3	82	5	31	16	0	3	--	--	2.44	.31	.47	17	3	.0	0	4.6	Φ NE	29	SW	13	1	9	20	8.1	38
Salem	195	1010.8	1018.2	60	39	49.6	-1.8	74	5+	29	22	0	4	44	82	3.50	1.11	.92	18	0	.0	0	7.3	S	*32	WSW	13	0	10	20	8.4	--
Sexton Summit (R)	3836	883.5	1017.6	50	34	42.0	-2.3	74	4	23	22	0	19	--	--	1.83	-.25	.52	17	0	4.9	2	11.4	S	--	---	--	3	5	22	8.3	--
PACIFIC AREA																																
Canton Island	8	1008.1	1008.5	90	78	84.2	.5	93	27	75	2	21	0	75	78	1.42	-2.36	.76	10	0	.0	0	14.1	E	*26	E	13	0	12	18	7.8	--
Guam (R)	361	------	------	88	75	81.2	2.1	90	23	69	30	1	0	--	--	1.44	-.93	.28	19	0	.0	0	8.9	† E	23	E	3	--	--	--	----	57
Johnston Island	7	1014.6	1015.2	82	74	77.8	----	84	26+	71	28+	0	0	69	75	1.35	----	.36	14	0	.0	0	16.2	---	31	E	10	0	16	14	7.3	83
Koror (R)	94	1006.1	1009.9	88	76	81.8	.3	90	27+	74	26+	4	0	76	85	11.66	2.88	4.92	24	3	.0	0	6.6	E	20	SE	18	0	1	29	9.7	55
Majuro	10	1009.5	1009.8	85	76	80.2	----	87	28+	73	16+	0	0	75	83	23.41	----	3.72	26	2	.0	0	14.1	ENE	33	E	23	0	4	26	9.0	50

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	No. of days: Max. 90° F. or above	No. of days: Min. 32° F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max. depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear	No. of days (sunrise to sunset): Partly cloudy	No. of days (sunrise to sunset): Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb.	°F	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
PACIFIC AREA (Cont'd.)																																
Ponape (R)	120	1004.4	1009.7	86	75	80.4	-1.1	89	9	72	18+	0	0	76	87	25.72	6.72	5.04	27	1	0.0	0	5.4	E	21	E	6	0	2	28	9.7	39
Truk, Moen Is.	5	1009.5	1009.8	86	77	81.7	.5	88	18+	74	22+	0	0	76	83	10.86	-.66	2.38	25	0	.0	0	7.1	NNE	21	NE	5	0	0	30	9.9	--
Wake Island	11	1015.6	1016.0	84	74	79.2	.9	86	15+	71	[illegible]	0	0	71	76	1.94	.00	.81	17	1	.0	0	16.5	ENE	*28	ENE	1	12	16	2	4.5	--
Yap (R)	55	1007.8	1009.8	87	77	82.0	-.3	89	15+	73	1	0	0	76	82	6.30	.55	2.07	20	0	.0	0	8.3	ENE	21	E	20	0	4	26	9.3	84
PENNSYLVANIA																																
Allentown	376	1001.6	1016.0	66	42	54.1	5.6	89	25+	27	11	0	4	40	65	3.45	.06	1.35	11	3	T	T	12.8	W	*43	WNW	18	4	16	10	6.5	--
Erie	732	------	1014.7	59	40	49.9	5.6	80	24+	27	19+	0	10	39	70	2.18	-1.32	.49	18	4	2.6	1	13.9	WSW	*37	SW	12+	2	7	21	8.0	--
Harrisburg	335	1001.8	1015.7	68	46	56.7	5.8	91	23	29	11	2	2	38	54	2.59	-.38	1.60	10	4	0.1	T	8.7	WNW	32	SW	26+	3	10	17	7.3	55
Philadelphia (U)	35	------	------	69	47	58.0	5.3	91	25	34	11	2	0	--	--	----	----	----	--	--	----	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1011.3	1015.7	70	44	56.7	5.1	92	25	29	11+	2	2	42	63	2.92	-.46	1.13	8	2	T	0	9.9	WNW	30	NW	12+	4	16	10	6.4	71
Pittsburgh (U)	749	------	------	68	47	57.7	5.9	88	24+	29	10+	0	5	--	--	1.43	-1.65	.59	10	--	.4	--	----	---	--	---	--	--	--	--	----	75
Pittsburgh	1151	985.3	1016.0	66	42	54.0	5.2	86	24+	21	11	0	8	38	60	1.37	-1.82	.47	9	3	1.1	T	9.6	W	*35	WSW	26	1	6	23	8.0	59
Reading (U)	266	1003.5	------	68	46	57.1	5.8	91	23	31	11	3	1	--	--	3.45	.21	1.47	7	4	T	T	12.2	---	45	S	26	5	13	12	6.7	60
Scranton	940	980.9	1015.5	63	42	52.4	5.4	87	24	26	11	0	8	38	60	3.40	.15	1.17	11	3	3.6	3	9.5	SW	34	SW	18	3	9	18	7.7	54
Williamsport	527	996.6	1015.5	66	43	54.5	5.4	91	24+	27	11	3	4	39	61	3.46	-.08	1.79	13	2	2.3	1	9.8	W	*40	W	8	2	9	19	7.6	--
RHODE ISLAND																																
Block Island	110	1010.8	------	53	40	46.3	1.4	70	25	31	11	0	1	--	--	4.07	.70	2.50	12	3	T	T	----	---	--	---	--	5	10	15	7.1	--
Providence	55	1009.4	1015.6	58	39	48.7	2.7	79	15	28	11	0	4	38	69	2.94	-.43	1.23	16	2	T	0	11.6	S	*32	WSW	12+	5	9	16	7.0	52
SOUTH CAROLINA																																
Charleston (U)	9	------	------	73	59	66.0	.4	81	25+	42	11	0	0	--	--	1.54	-.91	.70	5	0	.0	0	10.2	---	32	NE	19	--	--	--	----	--
Charleston	41	1016.9	1018.9	78	54	65.8	1.5	88	24	30	11	0	1	52	68	2.05	-.77	.89	8	3	.0	0	8.9	SW	43	NW	5	14	6	10	4.7	78
Columbia	217	1009.4	1017.8	79	52	65.3	1.8	93	25	29	11	4	1	49	61	3.91	.37	1.78	8	3	.0	0	8.2	SW	29	WNW	27+	12	9	9	4.9	73
Florence	146	1011.4	1017.3	78	52	65.2	1.8	92	25	34	11	3	0	50	63	1.76	-1.91	1.27	6	4	.0	0	8.8	S	*23	SW	5	14	8	8	4.5	--
Greenville	1018	980.3	1017.6	75	51	62.7	2.5	92	25	32	10	3	1	43	55	1.91	-1.91	.94	7	1	.0	0	8.4	SW	29	SW	7	12	6	12	5.2	75
Spartanburg	801	987.5	1017.5	75	50	62.8	2.3	90	25+	32	11	2	1	46	60	2.43	-1.12	.76	9	1	.0	0	10.5	SW	*35	W	21	12	9	9	4.8	--
SOUTH DAKOTA																																
Huron	1282	965.5	1013.2	57	34	45.5	-.9	82	22	20	9	0	15	34	69	1.55	-.37	.63	9	7	3.9	4	15.5	WNW	41	S	18+	5	11	14	6.9	62
Rapid City	3165	898.7	1013.9	61	34	47.5	3.0	86	10	24	9	0	13	27	52	1.21	-.80	.58	5	0	4.3	3	14.4	NNW	51	W	14	5	10	15	6.9	57
Sioux Falls	1420	960.7	1012.6	57	35	45.9	-.5	93	22	20	9	1	14	33	65	3.64	1.29	1.52	8	1	4.6	5	14.3	NW	*34	N	17	6	10	14	7.0	--
TENNESSEE																																
Bristol	1519	963.0	1017.4	72	46	59.1	3.1	88	26	25	11	0	4	42	59	1.73	-1.52	.55	10	2	T	0	7.4	SW	*29	WSW	26+	12	8	10	5.3	--
Chattanooga	670	989.7	1017.4	74	49	61.4	1.7	89	23	28	11	0	3	46	63	2.69	-1.84	.76	8	3	.0	0	8.2	S	29	NW	18	10	8	12	5.5	67
Knoxville	950	982.1	1017.5	74	49	61.3	2.3	89	25	27	11	0	2	44	57	1.83	-1.81	.58	8	2	T	0	8.4	WSW	61	SW	26	11	7	12	5.5	62
Memphis (U)	271	------	------	74	55	64.5	2.3	86	23	37	10	0	0	--	--	3.51	-1.19	1.51	7	--	.0	0	----	---	--	---	--	--	--	--	----	--
Memphis	263	1001.7	1016.5	76	54	64.8	3.0	87	23+	35	10	0	0	44	52	3.65	-1.15	1.52	5	6	.0	0	10.0	S	34	NE	6	10	11	9	5.2	73
Nashville	577	996.4	1016.5	74	48	61.0	1.3	87	24+	28	10	0	2	47	63	2.04	-1.65	.53	7	4	T	T	8.4	S	40	N	15	9	11	10	5.8	70
Oak Ridge	905	984.8	------	72	45	58.8	1.2	85	25+	25	11	0	3	--	--	2.09	-1.99	.57	9	4	.0	0	5.7	---	*45	---	30	12	8	10	5.0	--
TEXAS																																
Abilene	1759	952.3	1012.8	79	53	65.9	1.4	94	6	33	3	2	0	49	58	2.42	-.05	1.44	6	6	.0	0	13.8	S	35	S	22+	12	8	10	4.8	71
Amarillo	3590	886.6	1011.6	73	44	58.3	2.7	89	21	31	3	0	2	34	46	1.66	.21	1.46	3	1	.0	0	14.4	SSW	42	N	17+	14	9	7	4.5	86
Austin	615	992.6	1014.4	80	60	69.7	1.8	89	7+	46	4	0	0	56	67	1.01	-2.95	.43	7	5	.0	0	12.1	SSE	36	NE	2	6	8	16	6.5	57
Brownsville	16	1011.5	1013.9	82	65	73.6	-.1	89	15	46	4	0	0	64	79	2.52	.93	1.32	3	3	.0	0	14.3	SSE	52	SE	13	5	12	13	6.3	56
Corpus Christi	41	1013.5	1015.0	79	63	71.1	-.6	87	15+	44	4	0	0	63	79	3.26	1.52	1.46	5	6	.0	0	14.6	SSE	35	SE	12	6	8	16	6.7	59
Dallas	487	995.9	1014.5	78	57	67.5	1.2	94	6	39	4	1	0	52	60	2.98	-.89	1.55	5	6	.0	0	14.4	S	35	N	17	12	4	14	5.6	59
Del Rio (U)	957	------	------	84	60	71.8	.7	98	7	40	4	6	0	--	--	.49	-.96	.19	5	5	.0	0	----	---	--	---	--	--	--	--	----	--
El Paso	3920	884.2	1010.8	80	52	66.3	3.2	92	21	34	3	3	0	21	20	.02	-.25	.02	1	0	T	T	13.2	WSW	59	SW	12	14	11	5	4.0	89
Fort Worth	544	993.9	1014.6	78	56	67.3	1.4	95	6	37	4	1	0	52	62	1.67	-2.18	.91	7	5	.0	0	15.6	S	*36	NNW	17	11	5	14	5.6	--
Galveston (U)	7	------	------	73	65	68.6	-.3	77	30+	50	3	0	0	--	--	.83	-2.26	.40	6	--	.0	0	13.3	---	34	NE	3	--	--	--	----	62
Galveston	5	1013.9	1016.6	74	64	68.9	-.2	79	28	51	3	0	0	61	77	1.16	-2.24	.70	5	2	.0	0	10.3	SE	--	---	--	6	11	13	6.3	--
Houston (U)	41	1010.5	------	78	63	70.5	1.0	86	21	53	4	0	0	--	--	2.21	-1.19	1.33	7	6	.0	0	12.0	Ø SE	42	SE	13	7	6	17	6.8	51
Houston	50	1012.9	1015.8	78	62	69.8	1.4	85	26+	48	4	0	0	59	74	1.42	-1.67	.88	7	6	.0	0	14.2	SE	--	---	--	6	6	18	7.0	--
Laredo	500	997.3	1012.7	89	64	76.4	.5	102	29+	47	4	12	0	56	57	1.63	.02	1.16	4	3	.0	0	11.8	SE	*35	NE	17	10	7	13	5.6	--
Lubbock	3243	901.5	1012.3	78	46	62.1	2.6	92	21	29	3	2	1	39	48	.26	-.85	.24	2	1	.0	0	16.0	S	*40	NNE	16	14	8	8	4.2	--
Midland	2854	913.3	1011.5	80	51	65.3	.8	92	21	34	3	2	0	38	44	.28	-1.13	.16	3	1	.0	0	12.8	SSE	*32	N	29	13	7	10	4.5	--
Port Arthur	16	1014.6	1016.1	78	61	69.4	1.5	85	28+	48	4	0	0	61	77	3.51	-.43	2.32	5	4	.0	0	13.4	ESE	38	SE	29	6	7	17	6.6	59
San Angelo	1903	945.8	1012.7	79	54	66.8	-.6	92	7+	35	18	3	0	48	56	1.24	-.95	.36	5	4	.0	0	13.3	S	*35	N	26	12	8	10	5.0	--
San Antonio	792	989.8	1014.3	81	59	69.7	.9	89	6	40	4	0	0	57	69	2.08	-.94	1.16	5	6	.0	0	11.3	SSE	43	N	2	6	8	16	6.5	51
Victoria	110	1009.8	1014.7	80	61	70.5	-.1	87	6	46	4	0	0	60	71	.78	-1.66	.46	5	7	.0	0	13.6	SSE	‡50	WNW	25	5	6	19	7.0	--
Waco	500	993.6	1014.6	80	58	69.1	2.3	93	6	39	4	2	0	54	62	1.67	-2.30	1.50	3	4	.0	0	13.4	SSE	*32	NNW	17	9	7	14	5.9	--
Wichita Falls	1020	976.6	1013.4	78	52	64.9	2.3	95	6	34	3	1	0	48	56	1.85	-.50	1.46	3	5	.0	0	12.7	SSE	*32	NW	16	16	2	12	5.0	--
UTAH																																
Milford	5028	842.5	1013.5	65	32	48.8	1.0	81	20+	17	25+	0	17	--	--	.63	-.13	.43	3	0	.3	T	----	---	--	---	---	12	7	11	5.1	--
Salt Lake City	4220	865.9	1014.1	64	37	50.8	.7	82	9	24	17	0	8	29	48	1.11	-.65	.42	9	1	.7	T	9.2	SSE	38	S	22	8	10	12	5.7	77
Wendover	4237	868.9	1012.2	64	41	52.8	----	82	20	30	17+	0	4	--	--	.22	----	.22	2	1	T	T	----	---	--	---	--	11	9	10	5.3	--
VERMONT																																
Burlington	331	999.5	1014.4	54	34	43.9	1.6	76	17	20	11	0	13	33	69	2.64	.01	.60	15	1	.9	T	7.9	SSW	37	S	17	3	6	21	7.9	49
VIRGINIA																																
Lynchburg	947	982.7	------	73	48	60.2	4.7	91	26+	28	11	3	2	--	--	2.72	-.41	1.03	11	1	.0	0	----	---	29	S	17+	9	13	8	5.3	78
Norfolk	26	1015.5	1017.5	75	53	63.7	7.4	97	26	37	20	4	0	46	58	1.40	-1.76	.80	7	1	.0	0	12.7	SW	39	NE	28	11	10	9	5.1	74
Richmond	162	1010.9	1017.3	76	48	61.8	5.7	96	26	27	11	5	2	44	58	3.57	.34	1.63	7	2	.0	0	9.4	SSW	25	W	8+	11	10	9	5.4	79
Roanoke	1174	974.5	1016.8	73	47	60.2	4.7	91	26+	27	11	3	2	40	53	2.19	-.76	.83	10	2	T	0	10.4	SE	--	---	--	9	12	9	5.3	--
WASHINGTON																																
Olympia	190	1009.1	1016.5	60	38	49.1	.7	72	6+	28	10	0	3	41	77	4.53	2.19	.82	19	0	T	0	8.5	SW	*36	SSW	12	0	5	25	8.7	--
Seattle (U)	14	------	------	59	45	52.4	.6	72	7+	38	21+	0	0	--	--	2.68	.74	.52	13	--	.0	0	----	---	48	SW	14	--	--	--	----	46
Seattle	14	1015.2	1016.3	--	--	----	----	--	--	--	--	--	--	39	65	----	----	----	--	--	---	--	9.4	S	--	---	--	--	--	--	----	--
Seattle-Tacoma	386	1002.4	1016.8	57	41	49.3	.2	72	27	34	16	0	0	42	79	2.88	.76	.64	19	2	.0	0	11.2	S	*37	SSW	13	1	8	21	8.1	--
Spokane	2357	946.2	1015.7	56	36	45.9	-.4	72	8	26	22	0	11	32	61	1.51	.52	.42	11	1	.6	T	10.2	SSW	35	SW	20	6	8	16	6.8	56
Stampede Pass (R)	3958	877.8	1017.5	42	31	36.5	-.6	62	6	22	21	0	20	--	--	7.22	1.72	1.77	19	0	57.5	91	----	---	--	---	--	1	7	22	8.5	--
Tatoosh Island(R)	101	1011.5	1015.2	52	44	47.9	.4	66	27	36	14	0	0	43	83	7.73	2.50	1.35	17	1	.0	0	17.3	ENE	73	SW	13	0	6	24	8.7	36
Walla Walla (U)	949	979.3	1015.2	63	44	53.4	-.5	79	4	36	22+	0	0	--	--	1.31	.07	.37	12	0	T	0	6.2	Ø S	32	W	14	5	10	15	6.8	54
Yakima	1061	976.6	1015.9	64	35	49.1	-2.3	80	7	25	16	0	14	31	52	.54	.11	.40	5	0	T	0	8.9	WNW	*35	SSW	20	3	9	18	7.5	--
WEST INDIES																																
San Juan P. R.	15	1012.9	1015.7	86	71	78.4	2.2	92	28	65	7+	3	0	70	79	5.76	1.85	1.13	23	1	.0	0	8.3	ENE	26	NE	16	2	20	8	6.3	45
Swan Island	33	1011.9	------	86	77	81.8	-.3	88	30+	73	12	0	0	--	--	1.36	-2.89	.27	9	2	.0	0	----	---	--	---	--	2	20	8	6.5	--
WEST VIRGINIA																																
Charleston	950	980.7	1016.3	72	47	59.5	4.5	89	23	25	11	0	3	40	54	3.23	-.51	1.03	9	2	T	0	7.1	WSW	*28	W	8	3	15	12	7.1	--
Huntington (U)	567	------	------	73	47	60.0	2.7	90	23	26	11	1	4	--	--	1.34	-2.08	.58	6	--	T	T	----	---	--	---	--	--	--	--	----	--
Parkersburg (U)	615	------	------	71	46	58.1	4.3	89	24+	26	11	0	4	--	--	1.59	-1.49	.37	9	2	T	T	6.6	---	24	NW	5	3	9	18	7.4	53

See footnotes at end of table

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation								Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
WISCONSIN																																	
Green Bay	689	989.5	1012.5	54	34	44.3	2.5	82	22	17	18	0	11	37	79	3.13	0.62	1.20	11	4	2.5	1	13.9	SSW	56	W	11	4	10	16	7.3	42
La Crosse	652	987.1	1012.1	58	39	48.8	2.2	86	23+	22	10+	0	8	35	61	3.25	.94	.97	11	5	T	0	13.5	S	*39	WNW	11	5	11	14	6.9	--
Madison	857	977.0	1012.6	59	38	48.1	2.4	83	23	18	10	0	10	37	69	4.02	1.53	1.34	12	7	1.8	1	12.4	S	33	SW	2	5	9	18	7.0	49
Milwaukee	672	988.2	1013.6	58	38	48.0	3.7	85	23	20	10	0	9	37	70	2.92	.53	1.00	17	6	1.6	T	14.8	WNW	42	SW	11	6	9	15	6.8	56
WYOMING																																	
Casper	5319	834.1	1011.8	59	30	44.2	1.2	76	21	16	17	0	20	23	50	1.06	-.86	.46	7	2	9.7	7	14.4	WSW	*46	W	10+	4	15	11	6.5	--
Cheyenne	6131	808.3	1011.3	60	33	46.8	5.7	82	21	21	30	0	11	24	47	.82	-1.32	.52	[illegible]	4	5.6	[illegible]	15.4	WNW	51	NW	19+	5	14	11	6.6	63
Lander	5563	832.0	1011.9	59	32	45.4	3.3	74	9	20	17	0	17	22	44	1.07	-1.34	.73	5	1	13.0	[illegible]	8.3	⊕ W	57	SW	12	6	14	10	6.0	62
Sheridan	3942	882.5	1014.7	57	32	44.4	.9	76	5	20	17	0	18	26	53	.60	-1.66	.35	[illegible]	1	5.4	2	10.4	NW	49	NW	10	4	10	16	7.0	60

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

⊕ Wind direction to 8 compass points only.

¢ City Office Data.

† Airport Data.

‡ Peak Gust.

HEATING DEGREE DAYS

(Base 65°F.)

APRIL 1960

State and station	Current season		Normals July through this month
	This month	Period July through this month	
ALABAMA			
Birmingham	97	3021	2750
Mobile	44	2055	1612
Montgomery	60	2473	2137
ALASKA			
Anchorage	923	9750	9852
Annette	581	6050	6279
Barrow	2090	18468	17629
Barter Island	2072	18641	
Bethel	1618	12743	11733
Cold Bay	1169	8644	
Cordova	836	8202	8459
Fairbanks	1143	13525	13419
Juneau	713	7625	7988
King Salmon	1193	10264	
Kotzebue	1754	14745	14403
McGrath	1398	13771	13431
Nome	1661	13203	12540
St. Paul	1405	9482	9210
Yakutat	788	7793	8216
ARIZONA			
Flagstaff	635	6561	6848
Phoenix (U)	2	1293	1492
Phoenix	14	1451	1698
Prescott	303	4202	4352
Tucson	68	1903	1776
Winslow	280	4468	4550
Yuma	8	859	951
ARKANSAS			
Ft. Smith	117	3762	3164
Little Rock	83	3479	2964
Texarkana	57	2995	2362
CALIFORNIA			
Bakersfield	118	1890	2094
Bishop	242	3819	4044
Blue Canyon	629	4605	5120
Burbank	82	1232	1701
Eureka (U)	417	3842	3975
Fresno	161	2338	2489
Los Angeles (U)	65	889	1364
Los Angeles	132	1205	1838
Mt. Shasta (R)	597	5116	5382
Oakland	240	2258	2832
Red Bluff	210	2388	2495
Sacramento (U)	164	2142	2510
Sacramento	166	2335	2712
Sandberg (R)	422	3760	3926
San Diego	89	961	1434
San Francisco (U)	268	2162	2641
San Francisco	269	2287	2993
San Jose (U)	211	1875	2227
Santa Maria	267	2245	2553
COLORADO			
Alamosa	657	8255	8016
Colorado Springs	489	6401	5872
Denver	434	5977	5781
Grand Junction	359	5597	5628
Pueblo	340	5918	5479
CONNECTICUT			
Bridgeport	446	5193	5609
Hartford	459	6004	5907
New Haven	459	5361	5713
DELAWARE			
Wilmington	279	4771	4794
DIST. OF COLUMBIA			
Washington (U)	207	4209	4178
Washington	200	4167	4246
FLORIDA			
Apalachicola (U)	31	1562	1307
Daytona Beach	21	901	868
Fort Myers	7	489	405
Jacksonville	28	1440	1243
Key West	0	115	77
Miami	0	256	178
Miami Beach	0	150	123
Orlando	11	755	650
Pensacola (U)	31	1782	1435
Tallahassee	45	1742	1519
Tampa	5	689	674
West Palm Beach	1	351	248
GEORGIA			
Athens	120	3362	2785
Atlanta	96	3156	2806
Augusta	78	2788	2138
Columbus	76	2635	2396
Macon	65	2549	2049
Rome	141	3578	3111
Savannah	58	2261	1710
IDAHO			
Boise	475	6480	5549
Lewiston	428	5551	5193
Pocatello	545	6929	6523
ILLINOIS			
Cairo (U)	148	3913	3709
Chicago	374	6140	6023
Moline	376	6710	6120
Peoria	374	6408	5854
ILLINOIS (Cont'd.)			
Springfield	301	5885	5490
INDIANA			
Evansville	236	4931	4264
Ft. Wayne	404	6221	6008
Indianapolis	333	5813	5405
South Bend	441	6425	6214
IOWA			
Burlington	362	6471	5888
Des Moines	415	7028	6200
Dubuque	488	7471	6928
Sioux City	460	7555	6730
KANSAS			
Concordia (U)	291	5997	5157
Dodge City	247	5519	4908
Goodland	392	6457	6068
Topeka	288	5798	5057
Wichita	203	5098	4463
KENTUCKY			
Lexington	243	4967	4824
Louisville	197	4591	4340
LOUISIANA			
Baton Rouge	12	1941	1595
Lake Charles	17	1967	1543
New Orleans (U)	5	1543	1175
New Orleans	35	1738	1317
Shreveport	37	2720	2117
MAINE			
Caribou	895	8656	9460
Greenville (U)	847	8449	
Portland	674	6764	7170
MARYLAND			
Baltimore (U)	197	4179	4130
Baltimore	254	4657	4667
Frederick	313	5150	4748
MASSACHUSETTS			
Blue Hill Obs. (R)	551	6037	
Boston	493	5288	5513
Nantucket	619	5299	5569
Pittsfield	547	6915	7253
MICHIGAN			
Alpena	727	7980	7501
Detroit	446	6111	6093
Detroit(Willow Run)	448	6184	6170
Escanaba (U)	735	7855	8020
Grand Rapids	488	6631	6695
Lansing	497	6845	
Marquette (U)	746	7909	7863
Muskegon	542	6666	6623
S. Ste. Marie	815	8596	8752
MINNESOTA			
Duluth	786	9300	9285
Internat. Falls	839	10018	9992
Minneapolis	574	7849	7514
Rochester	578	7905	7705
St. Cloud	676	8729	8456
MISSISSIPPI			
Jackson	57	2814	2202
Meridian	83	2831	2324
Vicksburg (U)	40	2665	2000
MISSOURI			
Columbia	267	5493	4964
Kansas City	238	5275	4769
St. Joseph	310	6015	5195
St. Louis (U)	235	4934	4368
St. Louis	241	5125	4587
Springfield	253	5036	4559
MONTANA			
Billings	600	6754	6683
Glasgow	669	8767	8265
Great Falls	660	7158	7030
Havre (U)	612	7807	7775
Helena	682	7836	7654
Kalispell	654	8571	7449
Miles City	577	7651	7459
Missoula	636	7711	7332
NEBRASKA			
Grand Island	406	6998	6077
Lincoln (U)	355	6555	5661
Norfolk	488	7647	6754
North Platte	457	7143	6244
Omaha	379	6892	5953
Scottsbluff	493	7726	6455
Valentine	551	7658	6704
NEVADA			
Elko	608	6926	6774
Ely	649	7157	6825
Las Vegas	77	2458	2425
Reno	497	5674	5553
Tonopah	430	5010	5450
Winnemucca	585	6366	5959
NEW HAMPSHIRE			
Concord	591	6635	7214
NEW HAMPSHIRE (Cont'd.)			
Mt. Washington Obs.	1153	11674	
NEW JERSEY			
Atlantic City (U)	368	4574	4528
Newark	322	4730	5093
Trenton (U)	294	4774	4924
NEW MEXICO			
Albuquerque	211	4110	4319
Clayton	336	5322	4930
Roswell	120	3891	3396
NEW YORK			
Albany	457	6458	6666
Binghamton	503	6655	7131
Buffalo	494	6217	6451
New York (U)	358	4797	4879
New York	334	4656	4838
Rochester	491	6564	6520
Schenectady	433	6087	6777
Syracuse	468	6403	6236
NORTH CAROLINA			
Asheville (U)	226	4376	3962
Cape Hatteras (R)	116	2649	2367
Charlotte	124	3445	3176
Greensboro	182	4141	3760
Raleigh	159	3780	3328
Wilmington	93	2782	2316
Winston-Salem	162	3975	3672
NORTH DAKOTA			
Bismarck	587	8597	8562
Devils Lake (U)	780	9900	9409
Fargo	708	9068	8835
Grand Forks	723	9615	
Pembina	761	9654	
Williston (U)	667	8745	8570
OHIO			
Akron	392	6099	5918
Cincinnati Obs.	245	4915	4424
Cincinnati	262	5174	5023
Cleveland	430	5841	5737
Columbus	315	5470	5404
Dayton	336	5705	5379
Sandusky (U)	389	5824	5601
Toledo	451	6303	6089
Youngstown	400	6159	5878
OKLAHOMA			
Oklahoma City	134	4182	3604
Tulsa	161	4117	3540
OREGON			
Astoria	469	4634	4416
Burns (U)	626	6717	6410
Eugene	432	4359	4384
Meacham	703	7177	7034
Medford	410	4336	4271
Pendelton	392	5310	4956
Portland (U)	361	3972	3874
Portland	424	4565	4297
Roseburg	391	4100	
Salem	457	4565	4234
Sexton Summit (R)	684	5800	5497
PENNSYLVANIA			
Allentown	347	5413	5691
Harrisburg	292	5072	5116
Philadelphia (U)	343	4450	4430
Philadelphia	274	4749	4762
Pittsburgh (U)	287	4861	4898
Pittsburgh	357	5811	5674
Reading (U)	283	4828	4926
Scranton	393	6043	5816
Williamsport	346	5641	5692
RHODE ISLAND			
Block Island	556	5161	5412
Providence	480	5528	5809
SOUTH CAROLINA			
Charleston (U)	52	2198	1769
Charleston	65	2386	1973
Columbia	84	2898	2435
Florence	82	2824	2507
Greenville	130	3455	3028
Spartanburg	128	3473	3018
SOUTH DAKOTA			
Huron	583	8452	7543
Pierre	529	8001	
Rapid City	520	7206	7030
Sioux Falls	576	8191	7492
TENNESSEE			
Bristol	201	4404	4053
Chattanooga	140	3734	3339
Knoxville	158	3919	3540
Memphis	91	3518	3113
Nashville	171	4102	3470
TEXAS			
Abilene	81	3008	2657
Amarillo	214	4694	4246
Austin	17	2133	1713
Brownsville	5	720	617
TEXAS (Cont'd.)			
Corpus Christi	10	1232	1011
Dallas	51	2760	2272
Del Rio (U)	19	1769	
El Paso	58	2504	2641
Fort Worth	54	2823	2356
Galveston (U)	11	1570	1211
Galveston	13	1658	1233
Houston (U)	5	1654	1276
Houston	8	1747	1388
Laredo	4	1116	781
Lubbock	142	3968	3551
Midland	84	3028	
Port Arthur	15	1907	1517
San Angelo	69	2733	2107
San Antonio	14	1942	1579
Victoria	7	1568	1126
Waco	29	2451	2025
Wichita Falls	84	3402	3009
UTAH			
Milford	479	6112	6099
Salt Lake City	419	5922	5552
VERMONT			
Burlington	624	7369	7486
VIRGINIA			
Lynchburg	206	4371	4066
Norfolk	152	3528	3395
Richmond	184	4122	3889
Roanoke	206	4411	4071
WASHINGTON			
Olympia	475	5073	4980
Seattle (U)	370	3988	4085
Seattle-Tacoma	465	4758	4813
Spokane	567	6895	6376
Stampede Pass (R)	848	8457	8075
Tatoosh Island (R)	507	4902	4957
Walla Walla (U)	347	4978	4639
Yakima	473	6008	5587
WEST VIRGINIA			
Charleston	214	4632	4299
Huntington (U)	205	4449	3983
Parkersburg (U)	248	4911	4618
WISCONSIN			
Green Bay	617	7827	7805
La Crosse	501	7366	7326
Madison	513	7497	7063
Milwaukee	515	7033	6745
WYOMING			
Casper	615	7346	7111
Cheyenne	542	6973	6927
Lander	580	7630	7744
Sheridan	612	7434	7355

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

APRIL 1960

	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				Ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
STATE	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alaska												4																	
Arkansas	3	1		3	5			4																					
California						0	0	0	3	0	3	3	0													4	0	4	0
Connecticut								3	3							3	3												
Colorado										0	5	°5	C													0	0	0	6
Florida	2	2	0	0	5									1	1	0	0												
Georgia	2	2	0	0	3					0	0	3	0	1	1	0	0									0	0	5	6
Idaho										2																			
Illinois	7	4	0	4	4	0	0	D	0	0	0	5	0	1	1	A5	0												
Indiana	4	2	0	1	4					0	1	5	0																
Iowa	3	1	1	5	6	0	0	5		0	1	6		0	2	4													
Kansas	10	6		14	5			5			1	4	3		2	4													
Louisiana	W3	2	0	4	5	0	0	°5	C	0	0	5	4	0	1	4	0												
Maryland	1	1			3							4																	
Massachusetts										0	0	3	0	0	0	4	0												
Michigan	1	1			4							5			4	4													
Minnesota														2	1	4	0												
Missouri	3	2		4	5			5	4																			2	
Montana										0	0	5	0																
Nebraska	1	1	0	0	3					0	3	4	4	0	0	3	0												
New Hampshire																										0	0	4	0
New Jersey	1	1	0	0	2																								
New Mexico	1	1	0	0	0									1	0	0	0												
New York											4	5																6	
North Carolina																										0	0	4	4
Ohio	1	1	0	0	3	0	0	4	0																				
Oklahoma	18	4	3	73	6	0	0	6	5	0	1	6	0	1	2	4	0												
Oregon	F1	1	0	0	0	0	0	1	4	0	7	5	3	0	0	3	1									0	0	1	5
Pennsylvania											1	3																	
Puerto Rico																										*3	2	3	C
Rhode Island																4													
South Dakota															1	3													
Tennessee										0	1	4	0																
Texas	8	4	3	35	5	0	3	°6	C	0	0	4	0	1	0	0	0												
Utah												4																	6
Vermont														0	0	3	0												
Washington						0	0	0	4	0	0	5	0																
Wisconsin	2	2	0	0	3	0	0	5	0																			5	
Wyoming	1	1	0	1	4																								

° Includes crop damage.
C Crop damage.
D Occurred; estimates not available.
A Additional occurred; estimates not available.
W Includes 1 waterspout.
F Actually a tornado funnel which did not touch ground.
* One by drowning unconfirmed.
‡ Includes heavy sleet storm.
# Freezing drizzle and freezing rain, commonly known as glaze.
Ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS
APRIL 1960

Severe snowmelt floods developed in the Midwest in the Upper Mississippi and Lower Missouri Basins during the latter part of March and early April. Record crests were reported along several tributary streams in Iowa and Nebraska. Record crests were reported along the main stem of the Mississippi from below Burlington, Iowa, to Quincy, Ill., early in April. The flooding along the Big Sioux at Akron, Iowa, was the greatest since the turn of the century.

Near record to record stages were reported in streams in the Lake Erie and Ontario Drainages early in April. In the Atlantic Slope Drainage, the Connecticut River from Massachusetts northward reached the highest stage since 1938. Moderate to severe flooding was reported in streams in the East Gulf of Mexico Drainage with crests ranging from the second to the fifth highest of record. Flooding reported elsewhere was mostly light to moderate.

RED RIVER OF THE NORTH

Minor flooding occurred on the Red River of the North at and below Moorehead, Minn., beginning on the 9th. The crests ranged generally from 3/4 of a foot to 2 feet above flood stage and occurred between the 9th and 14th. Minor flooding occurred on the Park River near Grafton, N. Dak., during the latter part of the month from heavy rains. Very little if any damage resulted from the overflows.

ST. LAWRENCE DRAINAGE

Lake Michigan. --This was the first flood on the lower Grand River in Michigan since March 23, 1948. Portland was the only major town not flooded to at least flood stage. This flood was due mostly to snowmelt. The weather during March was the coldest on record for that month. The water equivalent of the snow and ice which varied in depth from 5 to 12 inches averaged around 2.5 inches. The temperature rose to 51° on March 27, followed by daily maximas of 44°, 65°, and 61° on the next 3 days during which time it remained above freezing at night. The snowmelt was augmented by about 0.25 inch of rain on the 30th and 31st.

Lake Huron. --The moderate flooding on streams in the Lake Huron Drainage in Michigan which began during the latter part of March and continued into the first few days of April was due to snowmelt and heavy rainfall. A number of basements were flooded in residential areas along the Tittabawassee at Midland, Mich., the Shiawassee at Owosso, Mich., and the Cass at Vassar, Mich. The Dow Chemical Saran Wrap Plant was closed at Midland, Mich., because the roads leading to the plant were flooded. There was some damage to golf courses along the Flint River at Flint, Mich. Many homes were evacuated in Flint and a few streets were closed.

Lake Erie. --The most serious flooding in the Lake Erie Drainage occurred on Tonawanda Creek which crested at a record stage of 16.95 feet at Rapids, N. Y., on April 1. Scores of homes in Newstead, Clarence, and North Amherst were cut off or in some cases flooded with water.

Minor flooding occurred on the St. Joseph River at Montpelier, Ohio, during the last 2 days of March and the first 2 days of April. This rise was due to rapid snowmelt with little or no contribution from rainfall.

Lake Ontario. --The near record to record stages which occurred in the lower tributaries of the Genesee River Basin in western New York during the latter part of March and the first part of April was due mostly to snowmelt.

ATLANTIC SLOPE DRAINAGE

All Rivers in Maine rose sharply early in April in response to substantial rainfall. The major rivers crested on the 6th to the 8th and all except the Penobscot reached close to flood stage. At Augusta, water reached into the Post Office automobile parking lot adjoining the waterfront, but receded without damage within a day. There was some flooding of smaller streams, including the Sandy, Kenduskeag, and Royal Rivers, but there was no damage other than fields and a few roads coming under water temporarily and water entering some basements. Rivers again began a slow rise, reaching a secondary crest on the 19th to the 22d from snowmelt and rainfall. The crests this time were quite a bit lower than on the 6th to the 8th, except the Penobscot River. In northernmost Maine, rivers were icebound until the last week of April, but were ice-free by the end of the month. Rivers in Aroostook County were still showing a slow rise at the close of April but were well below bankfull stage.

Minor flooding occurred in the marginal property along the Merrimack River and its tributaries from Concord southward in the States of New Hampshire and Massachusetts. The rivers rose slightly above flood stage from the 5th to the 8th with crests on the 6th.

Flood stage was not reached in the headwaters of the Merrimack River where precipitation in the form of rain amounted to slightly over 2.5 inches for the week, although some snow was still unmelted in the area. Three to 4 inches of rain fell during the same period at stations in the rest of the drainage area. Damages ranged from relatively light to property located in bottom land in Merrimack County to considerable to industry located in buildings along the river banks of Lowell and Lawrence in Massachusetts.

The minor flooding on the Charles and Neponset Rivers in Massachusetts early in April was due to heavy rain falling on soil already saturated from melting snow. The rainfall during the period from March 30 through April 5 was close to 3 inches.

The Connecticut River reached the highest stage since 1955 in Connecticut and the highest stage since 1938 from Massachusetts northward from snowmelt and moderate to heavy rainfall from March 30 to April 6. The rainfall during the 8-day period averaged 3.75 inches. The water equivalent of the snow cover on March 29 ranged from over 2 inches in the Farmington River Basin to around 10 inches in the northern portion. However, stream flow was low except in the brooks and smaller streams, where snowmelt due to warm temperatures was causing minor rises. The combination of above-normal snow depth and abnormal rainfall along with the surface not yet thawed over the watershed created high runoff and consequent flooding.

The flooding on the Hoosic, Schoharie, and Hudson Rivers in New York from March 31 to April 1 was due to moderate rain (3/4 to 1-1/2 inches) on top of a deep water-laden snow cover. Much of the snow south of the Mohawk Valley ran off with the rain. Additional rainfall of 1 to 3 inches between the 3d and the 6th caused additional flooding on streams in the Hudson River drainage. Snowmelt from the North Country also contributed to the runoff. Flooding was not serious in any area.

The light flooding on streams in central and northern New Jersey between the 4th and 9th was due to rainfall between the 3d and 6th and snowmelt. Flood damage was limited to low-lying areas and was confined mostly to flooding of basements in homes in the Pompton Plains vicinity.

The flood crests on the Susquehanna River from the New York border to Danville, Pa., were the highest since May 1946 and below Danville, the highest since November 1950. This flood was due to runoff from snowmelt and rainfall. The snow cover on March 27 ranged from a trace to as much as 43 inches in the higher elevations of the headwaters. The water equivalent of the snow cover ranged from 1. 5 to 2. 5 inches in wooded areas to 6 inches in the higher elevations. Maximum temperatures were in the middle and high 50's for several days prior to March 30. By the morning of March 31, 90 percent of the snow cover had melted. Considerable damage resulted from the flooding.

Heavy rains (over 2 inches) and snowmelt in late March and continuing into early April brought the Delaware River to near flood stage in the lower portion from Easton to Trenton, N. J., on the 5th. No damage was reported except for minor inconvenience resulting from rerouting of traffic along low-lying roads.

The flooding on the lower Potomac near Washington, D. C., on the 1st was due to runoff from snowmelt during the latter part of March. Temperatures reached near 80° on the 28th and 29th in many parts of the Potomac Basin causing rapid depletion of the moderately heavy snow cover. Additional flooding occurred between the 5th and 7th in the lower Potomac from heavy rain between the 3d and 5th. Near bankfull stages were reached in the upper Potomac and Monocacy Rivers in Maryland and in the upper Rappahannock in Virginia between the 4th and 6th. No damages were reported.

Rapidly melting snow during the latter part of March caused light flooding along the main stem of the James River in Virginia below Scottsville between March 30 and April 3. Although the crests were the highest on record since August 1955, no damages were reported. Heavy rains on the 4th over the upper reaches caused secondary flood crests in the same reach of the river about 1 foot higher than the first crests. Slight damages resulted to agriculture around Palmyra on the Rivanna River and State Farm, Va., where 560 acres were inundated.

Stream flow was high at the beginning of April, with flood stages continuing on the lower Neuse and Cape Fear Rivers in North Carolina from the flooding in March. Additional rain, ranging up to 3 inches between the 2d and the 5th, caused light to moderate flooding in eastern North Carolina streams. No damage resulted.

Heavy rainfall the last 2 days of March and the first part of April produced some of the highest crests in over a decade in streams in South Carolina. The upper Pee Dee River receded from a moderate flood to below flood stage on the 2d. Another rise set in on the 3d, rising to a stage 9 feet above flood stage at Cheraw on the 6th. This was a major flood and equalled the major flooding last February. Downstream at Peedee the stream rose to the highest stage since February 19, 1948. It receded to below flood stage on the 19th after having been in flood for 77 days. The Lynches River reached its highest stage at Effingham since September 1952. Light to moderate flooding occurred on streams in the Santee Basin. Low camp sites in the Edisto that had been inaccessible since hurricane Gracie in September 1959 could be reached by the end of the month by automobile. The crest on the Edisto during April was the highest since September 1949.

Heavy rains during the latter part of March and the first 5 days of April caused flooding in streams in Georgia. In the Savannah Drainage, the rainfall averaged 2 inches during the first 5 days of April, with the heaviest amounts in the extreme upper portion and around Butler Creek, Ga. In the Ogeechee Drainage, the rainfall averaged 2. 7 inches with the heaviest amount in the Midville, Ga., area. One of the heaviest amounts reported was 8,16 inches at Dublin, Ga. The Savannah River had been in flood at Clyo, Ga., since January 9 and was still in flood at the end of the month.

EAST GULF OF MEXICO DRAINAGE

Very heavy rains early in April 1960 caused the greatest rises in the Apalachicola River in Florida and tributary rivers in Georgia since 1948. Flooding in the Suwannee River, in Florida, however, was not as severe as in March 1959 and averaged about 10 feet less than the record flood crests of April 1948. The Suwannee River was in moderate flood over most of its course in Florida from the 10th to the 28th. The Chattahoochee River was in flood from the 4th to the 10th, with crests 3 to 6 feet above flood stage. Flooding in the Flint River continued from the 4th to the 14th, with the heaviest flooding in the Albany, Ga., area where the crest was 11 feet above flood stage. Damages in the Apalachicola System were fairly heavy.

Excessive rains during the period from the 2d to the 5th caused moderate to severe flooding in streams in Alabama. The rainfall during the 4-day period ranged from 5. 1 inches at Newton to 14. 4 inches at Highland Home, Ala. The runoff was heavy as the soil was saturated by torrential rains which occurred on March 29 and 30. The crest of 31. 5 feet at Elba on the Pea River on the 5th was the highest stage since March 17, 1938, when a crest of 35. 0 feet was recorded. Sixty families were evacuated in that area. On the Choctawhatchee River flood stages were exceeded by 4 to 7 feet. In the Newton area, where the least rainfall occurred, the crest stage of 24. 7 feet was the highest since September 27, 1956. The previous highest stage was 29. 6 feet on May 4, 1953. Further downstream at Geneva, Ala., the crest stage of 29. 7 feet on the 6th was the highest stage since September 3, 1937, when a stage of 31. 6 feet was recorded. This was the fourth highest stage of record. About 20 families were evacuated in this area. At Caryville, Fla., the crest of 16. 0 feet on the 7th was the highest stage since March 17, 1929, when a stage of 27. 1 feet was recorded. This was the second highest stage of record. On the Conecuh River at River Falls, Ala., the crest of 41. 4 feet on the 4th was the highest stage since November 30, 1948, when a stage of 41. 6 feet was recorded. This was the fifth highest stage of record. At Brewton, Ala., the crest of 21. 0 feet was the highest since December 2, 1948, when a stage of 21. 2 feet was recorded. This was the third highest stage of record.

Locally heavy rains over the middle and lower reaches of the Pearl and Pascagoula Rivers in Mississippi and

Louisiana on the 2d and 3d produced sufficient runoff to continue flooding along the Pearl. At Bogalusa, La., the river had been above flood stage since January 7, a total of 95 days.

A comparison of the crests during April with the previous maximum stages of record are given in the following table:

EAST GULF OF MEXICO DRAINAGE - COMPARATIVE CRESTS

River and station	Flood stage	1960 Crests		Previous Maximum Crests of Record	
		Stage	Date	Stage	Date
	Ft.			Ft.	
Chattahoochee: Eufaula, Ala.	40	45.7	Apr. 5	63.8	Mar. 17, 1929
Columbia, Ala.	42	44.3	Apr. 6	56.05	Mar. 18, 1929
Flint: Albany, Ga.	20	31.1	Apr. 7	36.6	Jan. 21, 1925
Bainbridge, Ga.	25	30.7	Apr. 9	40.9	Jan. 22, 1925
Apalachicola: Blountstown, Fla.	15	24.3	Apr. 9	28.6	Mar. 21, 1929
Pea: Elba, Ala.	30	31.5	Apr. 5	43.5	Mar. 1929
Choctawhatchee: Newton, Ala.	19	24.7	Apr. 5	39.4	Mar. 15, 1929
Geneva, Ala.	23	29.7	Apr. 6	46.9	Mar. 16, 1929
Caryville, Fla.	12	16.0	Apr. 7	27.1	Mar. 17, 1929
Conecuh: River Falls, Ala.	37	41.4	Apr. 4	52.55	Mar. 15, 1929
Brewton, Ala.	17	21.0	Apr. 5-6	33.3	Mar. 15, 1929

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--The spring snowmelt flood in the Upper Mississippi Basin in Minnesota began on March 27 and 28. The Cottonwood and Redwood Rivers crested on March 30, 1 to 5 feet above flood stage and receded within its banks early in the month. The Yellow Medicine River crested at Granite Falls on the 1st and was within its banks by the 4th. Flood stage was again exceeded between the 7th and 11th by 1.2 feet. There was some water damage to homes and businesses at Granite Falls, due to a levee break punctured by floating ice. The water receded within the hour after the break, but the initial surge had already done its damage. The Minnesota River was rising rapidly in the beginning of the month and rose to above flood stage at Montevideo and Carver, Minn., on the 3d and at Chaska and Savage, Minn., on the 4th. The Minnesota continued in flood for a period of 11 days at Montevideo to 22 days over the rest of its course. Although the flooding was general, there was no serious damage as the flooding was over bottom lands and pastureland and the growing season had not begun. Excessive rainfall on the 22d and 23d caused serious flooding on the Bad River at the Indian Village of Odanah, Wis. The entire village of 625 people was evacuated.

Severe floods developed during the latter part of March in tributary streams in Iowa, Illinois, Wisconsin, and along the Mississippi River from rapid snowmelt. At Burlington, Iowa, only March 1912 was snowier. The 16 inches of snow on the ground on two occasions in March was the greatest on record since 1897 when the station at Burlington was established. Water content of snow on the ground just prior to the spring melt ranged from 3 to 5 inches over much of the middle Mississippi Valley. Melting began on the 26th and most of the snow was gone from the open areas by the 29th. Flooding was extensive and covered the last 3 days of March and early April. The crest of 18.1 feet on the Cedar River at Waterloo, Iowa, on March 31 was the sixth highest flood of record. On the Iowa River at Marshalltown, Iowa, the crest of 17.5 feet on March 31 had been exceeded only one other time -- a 17.7-foot crest in 1918. On the North Skunk River at Sigourney, Iowa, the crest of 25.3 feet on March 31 was a record flood. At Oskaloosa, Iowa, on the Skunk River, the crest of 20.3 feet on April 3 was the third ranking flood of record. On the North Raccoon, the crest of 19.4 feet at Jefferson, Iowa, on March 31 had been exceeded only on two other occasions. At Van Meter, Iowa, on the Raccoon, the crest of 21.2 feet was the third highest flood of record, having been exceeded only in July 1958 and June 1947. The crest of 21.0 feet on the North River at Norwalk, Iowa, was the fourth ranking flood of record. On the Middle River at Indianola, Iowa, the crest of 20.4 feet on March 30 was the third ranking flood of record. The crest of 22.6 feet at Ackworth, Iowa, on the South River on March 30 was the fourth ranking flood of record. On the Des Moines River, the crest of 25.3 feet at Second Avenue in Des Moines and the crest of 20.0 feet at Scott Street in Des Moines were the fourth ranking floods of record and were exceeded only by the floods of June 1947, May 1903, and June 1954. At S. W. 18th Street in Des

Moines, the crest of 18. 8 feet was the second highest stage of record, exceeded only in June 1947. Downstream from Des Moines, a second crest of 23. 0 feet at Tracy, Iowa, on the 2d was the third highest flood of record, exceeded only by the floods of June 1947 and May 1903. At Eddyville, Iowa, the second crest of 24. 0 feet on the 4th was also the third ranking flood of record. At Ottumwa, Iowa, the crest of 17. 5 feet equalled the crest of May 1944 and was exceeded only by the floods of May 1903 and June 1947. Damage was extensive on the Des Moines River from Boone to below Ottumwa, Iowa; on the Iowa River from Marshalltown, Iowa, to Coraville Reservoir, and in some locations below Iowa City; on the Cedar River from Waterloo downstream; and on the Raccoon River from Jefferson, Iowa, to the mouth. No deaths were attributed to the flood, although more than 1, 000 persons were evacuated from their homes in the areas of severe flooding.

Streams in the Illinois River Basin in Illinois began flooding the latter part of March due to rapid snowmelt. Most tributary streams receded within their banks during the first few days of April. Heavy rain around the middle of the month resulted in secondary crests along the Illinois, with flooding continued into May in the lower portion. Crop damage was extensive along the Illinois. There was considerable damage to roads and bridges. No damage of consequence was reported in the Kaskaskia and Big Muddy Rivers.

Flooding developed along the main stem of the Mississippi on March 29 in the reach between Clarksville, Mo., and Winfield, Mo. By March 30 the flooding began at Keithsburg, Ill., and at Grafton, Ill. By March 31, the Mississippi was in flood from Keithsburg, Ill., to Alton, Ill. By April 3, flooding extended downstream to Cape Girardeau, Mo. Record crests occurred in the reach from below Burlington, Iowa, to Quincy, Ill., early in April. At Hannibal, Mo., the crest of 23. 4 feet was the second highest crest of record. The heavy rain near the middle of the month resulted in secondary crests at Hannibal and Louisiana, Mo., on the 18th and 19th, which were several feet lower then the first crests earlier in April. By the end of the month, the Mississippi had receded within its banks at all points except at Clarksville and Winfield, Mo. Crop damage was extensive.

A comparison of the March-April stages with the previous maximum stages of record are given in the table following the Missouri Basin.

Missouri Basin. --Floods developed in the Missouri Basin below the North Dakota-South Dakota State line during the last 10 days of March. The snow cover was generally light throughout the winter in South Dakota from the Black Hills to the Missouri River, never amounting to more than 3 to 6 inches, except a little accumulation in the higher elevations of the Black Hills. Floods in western South Dakota were mostly localized and the result of ice jamming between the 22d and 26th of March. Ice-jam floods occurred near the mouths of all the western tributaries of the Missouri as the ice on the Missouri River was thick and did not breap up completely until the last 4 days of March.

During the first half of March, 10 to locally 20 inches of new snow was added. This extended the deep snow cover of Iowa and eastern Nebraska northward to about 50 miles north of Huron and Sioux Falls, S. Dak. The March snows were largely responsible for the magnitude of the floods. However, 1- to 2-inch rains on April 1-2 created strong secondary rises and secondary crests and prolonged the flooding. Snowmelt floods developed from the Missouri River eastward in South Dakota to the southwestern counties of Minnesota and over northwest Iowa from the 26th to the 31st of March.

The James River went over its banks from Redfield to Forestburg, S. Dak., on March 28 and 29; and was flooding generally from Redfield to the mouth by April 1. The flooding along the James was caused by rapid melting of a 10- to 18-inch snow cover; much of which accumulated during the first half of March. An inch to 1-1/4 inches of precipitation, in the form of rain and snow on April 1-2, added to the overflow. The snow cover was lighter from Redfield upstream, and the James held at about bankfull with minor flooding in river swales and cutoffs. At Huron, S. Dak., the crest of 15. 4 feet on April 6, was the second highest stage of record since the station was established in 1902. The record high stage of 16. 5 feet on March 22, 1922, was only 0. 17 foot higher than the flood of 1952, so these two floods were almost identical. Losses were mostly rural, involving losses of grain, hay and flooding at farmsteads. There is considerable flat bottom land along the lower 100 miles of the James, where overflow cannot drain back into the river channel. Impounded water is lost only by the lowering of the water table. It is impossible to evaluate at this time the extent of the loss of this crop land for the 1960 crop season.

The Big Sioux River went out of its banks over most of its course in South Dakota and Iowa on March 28 and 29, and remained in flood at Sioux Falls, S. Dak., until April 2; at Hawarden, Iowa, until April 10 and at Akron, Iowa, until April 16. This was a major flood on the lower half of the Big Sioux, from Sioux Falls to Sioux City, Iowa, and is the highest flood of which we have an accurate record. Above Sioux Falls, flooding was on farmland, and was no more extensive than what is usually expected with the spring breakup about once or twice every 10 years. At Sioux Falls, the combination of flow from Skunk Creek and the main stem of the Big Sioux produced critically high stages, and if allowed to flow naturally would have probably produced as high and as damaging flood as occurred in June 1957. However, in the past 3 years, the Corps of Engineers has constructed levees and built a diversion channel north of the Sioux Falls Airport. On March 30 this diversion was opened up, dividing the flow through Sioux Falls, which diminished the peak of the flood and kept flood damage to a minimum. Between 50, 000 and 75, 000 acres of farmland was flooded by the Big Sioux. The severest flooding, and the most extensive, was between the mouth of the Rock River and Sioux City. Between Westfield, Iowa, and Sioux City, farmland was flooded as far as 2-1/2 to 3-1/2 miles from the river. About 70 farmsteads were flooded to various degrees. One hundred and fifty houses were flooded on the west side of Sioux City, S. Dak., and about 250 houses had basement flooding from sewer backup. Graham's Airport and several business houses were flooded in North Sioux City, S. Dak.

Flooding began on the Rock River on March 27 and continued until April 6. The first crest at Rock Valley, Iowa, of 15. 45 feet (flood stage 11 feet) on March 31 was due to snow runoff. Rains created a second crest of 15. 0 feet on April 2. The Rock River was a large contributor to the flood on the Big Sioux. About 8, 000 acres of farmland were flooded on the Rock and Little Rock River systems. Since the flood was ahead of the farm season and occurred to farmland, damages were relatively light, and were confined to road grades and bridges.

The Floyd River in Iowa had barely returned to its banks on March 31, following a record snowmelt flood, when another rise set in from heavy rain on April 1 and 2. The rain averaged about 2 inches, except about 1 to 1-1/2 inches above Alton, Iowa. The rain, falling on frozen soil and melting out old snow drifts, caused a strong second rise with crests averaging about 1 foot lower than the crests in March. The main damage was caused by the higher flood during the last 5 days of March.

Rapid snowmelt, and in some cases ice jams, produced local flooding in the lower reaches of the Loup River Basin, the Platte River, the Salt Creek Basin in Nebraska and the lower reaches of the Little Sioux River Basin in northwestern Iowa during the latter part of March and the early part of April. Floods in the Elkhorn Valley began to develop near O'Neill, Nebr., on March 27 and progressed southeastward to the mouth of the system, ending in the tributaries on April 7. Additional heavy rainfall on April 1 and 2 contributed to the runoff and kept the streams at high levels in the lower reaches for a longer duration. The flooding on the Elkhorn at Norfolk, Nebr., from March 28 to 31 was due principally to ice jams below the gage. Heavy ice jams moved downstream during the period March 28 to April 4 from Wisner, Nebr., past West Point, Scribner, Hooper, Winslow, and Waterloo, and caused gage readings 3 to 4 feet above flood stage with resultant heavy flood damage in those towns. Logan Creek ran near bankfull March 29 through April 1 in its upper reaches and above bankfull from Uehling to Winslow, Nebr., from March 31 to April 2. The heaviest flooding took place from Pierce southward to Norfolk, Nebr. Flooding on the lower reaches of the Platte River was aggravated by the high flow from the Elkhorn River. Lowland flooding occurred in the Ashland, Nebr., area on the Platte River, due to high flow from Salt Creek. Heavy damage resulted from the flooding. The greatest damage was to roads and bridges. Many homes were badly damaged.

Floods developed in streams in Missouri during the latter part of March, due to runoff from rapidly melting snow. Temperatures were much below normal until March 26. Very little snow remained on the ground after March 28. The high water from the snowmelt continued into April. There was great damage to many agricultural levies on streams, particularly along the Grand River from Chillicothe downstream to Brunswick, Mo. Although the actual stages were not as high as in some previous floods, failure of the levies caused more land to be inundated. At Sumner, Mo., the flood was somewhat lower than in June 1947, but no direct comparison can be made because of later construction of flood protection works in that area. Heavy rain (amounts up to 2 inches) during the night of April 13 produced light flooding on the Grand River in the vicinity of Sumner, Mo. Moderate to heavy rains on April 16 and 17 produced additional flooding on Missouri streams. The rainfall averaged only 0.75 to 1 inch, but the high moisture in the soil produced maximum runoff. Damage from this flood was at a minimum since there was little cultivation. The winter wheat crop along the Blackwater River at Blue Lick, Mo., was a total loss and had to be replanted. The river was out of its banks for a week from April 17 to 23.

Flooding was severe on the Big and Little Blue Rivers in Nebraska and Kansas, with crests ranging from the third to the fifth highest of record. Stages were high on the lower Saline, where flood waters covered the streets of Tescott, Kans. Heavy flooding in Frankfort, Kans., covered 40 city blocks from overflows of the Black Vermillion and tributary creeks. Considerable flooding took place on the upper Republican tributaries and on the main stem in the Orleans, Nebr., area where ice jams contributed to the flooding. Overflows covered large lowland areas along the Saline as well as below the control reservoirs on the lower Solomon and lower Republican Rivers. Flooding along the Smoky Hill and Kansas Rivers were mostly light. Moderate overflows occurred along the Marais des Cygne River in Kansas. This widespread flooding in Nebraska and Kansas was due to snowmelt. The snow cover immediately before the thaw began ranged from 8 to 15 inches with a water equivalent of 2.5 to 5 inches. Moderate damages resulted from the flooding with the heaviest losses confined to the Big Blue River Basin. Locally heavy rains of 4to 6 inches toward the end of the month produced near bankfull stages in the lower Marais des Cygnes River in Kansas on May 1.

The main stem of the Missouri had risen above flood stage in the reach from Nebraska City, Nebr., to St. Charles, Mo., by the end of March. Crests between April 3 and 8 were generally 3 to 5.5 feet above flood stage in the reach above Kansas City, Mo., and 5.5 to 8 feet above flood stage in the reach below. The crest of 22.5 feet at Rulo, Nebr., on April 6 was the second highest crest of record. The crests at other points on the Missouri ranged from the third to the fifth highest of record, except at Kansas City, Mo., where the crest of 22.9 feet was only 0.9 foot above flood stage.

A comparison of the crests during March and April with the previous maximum stages of record are given in the following table:

UPPER MISSISSIPPI AND MISSOURI BASINS - COMPARATIVE CRESTS

River and station	Flood stage	1960 Crests		Previous Maximum Crests of Record	
		Stage	Date	Stage	Date
Upper Mississippi Basin	Ft.			Ft.	
Wapsipinicon: De Witt, Iowa	10	11.7	Apr. 3	12.07	June 27, 1944
East Branch Pecatonica: Blanchardville, Wis.	11	14.2	Mar. 30	15.74	Feb. 28, 1948
Pecatonica: Martintown, Wis.	11	19.6	Apr. 1	20.24	Feb. 29, 1948
Freeport, Ill.	13	16.35	Apr. 2	17.0	Mar. 16, 1929
Shirland, Ill.	E10	E17.0	Apr. 2	16.73	Mar. 2, 1948
Iowa: Marshalltown, Iowa	13	17.5	Mar. 31	17.74	June 4, 1918
Wapello, Iowa	10	17.05	Apr. 6	16.85	June 17, 1947
North Skunk: Sigourney, Iowa	14	25.3	Mar. 31	#22.8	May -, 1944
Skunk: Augusta, Iowa	15	25.0	Apr. 3	23.04	May 26, 1944
Raccoon: Van Meter, Iowa	13	21.2	Apr. 2	21.6	June 13, 1947
Des Moines, Iowa	12	18.8	Apr. 2	19.8	June 13, 1947
La Moine: Ripley, Ill.	22	25.8	Apr. 1	26.03	Apr. 25, 1944
Mississippi: Keithsburg, Ill.	12	16.6	Apr. 4	17.1	Apr. 29, 1951
Burlington, Iowa	15	18.7	Apr. 4	#18.94	June -, 1851
Keokuk, Iowa	16	21.8	Apr. 3	#20.96	June 6, 1851
Gregory Landing, Mo.	15	22.3	Apr. 4	21.1	May 28, 29, 1944
Quincy, Ill.	17	24.4	Apr. 4	23.87	June 10, 1947
Hannibal, Mo.	16	23.4	Apr. 4	24.1	June 10, 1947
Louisiana, Mo.	15	20.9	Apr. 4, 8	22.6	June 22, 1947
Clarksville, Mo.	23	31.2	Apr. 8	32.53	June 22, 1947
Winfield, Mo.	23	32.1	Apr. 9	33.64	June 24, 1947
Missouri Basin					
James: Huron, S. Dak.	11	15.4	Apr. 6	16.5	Mar. 22, 1922
Big Sioux: Sioux Falls, S. Dak.	10	15.6	Mar. 30	16.01	June 17, 1957
Hawarden, Iowa	15	22.3	Apr. 1	20.5	June 20, 1957
Akron, Iowa	16	21.6	Apr. 1	19.95	June 22, 1954
North Branch Elkhorn: Pierce, Nebr.	12	14.5	Apr. 1	#14.79	May 11, 1944
Elkhorn: West Point, Nebr.	12	16.1	Mar. 31	#15.46	June 6, 1940
Winslow, Nebr.	14	18.35	Apr. 1	#19.77	June -, 1944
Platte: Louisville, Nebr.	9	12.45	Mar. 31	10.35	June 17, 1957
Nemaha: Falls City, Nebr.	20	27.7	Mar. 28	28.8	June 2, 1949
One Hundred Two: Maryville, Mo.	14	16.3	Mar. 29	16.5	Sept. 16, 1926, June 14, 1947
Big Blue: Crete, Nebr.	16	28.0	Mar. 30	28.74	July 10, 1950
Missouri: Nebraska City, Nebr.	18	21.3	Apr. 5	27.7	Apr. 18, 1952
Rulo, Nebr.	17	22.5	Apr. 6	25.6	Apr. 22, 1952

UPPER MISSISSIPPI AND MISSOURI BASINS - COMPARATIVE CRESTS (Cont'd.)

River and station	Flood stage	1960 Crests		Previous Maximum Crests of Record	
		Stage	Date	Stage	Date
Missouri Basin (Cont'd.)	Ft.			Ft.	
Missouri (Cont'd.):					
St. Joseph, Mo.	17	22.0	Apr. 6	27.2	Apr. 29, 1881
Atchison, Kans.	22	25.0	Apr. 7	32.5	Apr. 23, 1952
Leavenworth, Kans.	19	21.9	Apr. 4, 7	27.6	Apr. 23, 1952
Lexington, Mo.	22	27.6	Apr. 5	33.3	July 15, 1951
Waverly, Mo.	18	25.8	Apr. 3	28.2	July 14, 1951
Boonville, Mo.	21	28.2	Apr. 5	32.8	July 17, 1951
Jefferson City, Mo.	23	27.3	Apr. 6	34.2	July 18, 1951
Hermann, Mo.	21	28.4	Apr. 7	#35.5	June -, 1844
St. Charles, Mo.	25	32.2	Apr. 8	#40.1	June 27, 1844

E Estimated
# Prior to gage records
Stages and dates underlined exceeded previous maximum crests

Ohio Basin.--River levels in the upper Ohio Basin remained near or below seasonal levels in March until the exceptionally warm temperatures, beginning on March 27 resulted in the rapid melting of the heavy snow cover. Flood stages were exceeded at many points along the Allegheny, Monongahela, and Ohio Rivers and their tributaries during the latter part of March and the early part of April. The flooding on French Creek at Meadville, Pa., from March 30 to April 2 was the third highest flood of record and was 1.7 feet lower than the maximum flood of record which occurred on January 1959. Downstream at Cochranton, Pa., flooding was severe and reports from local interests indicate that the crest of this flood was higher than the severe ice-gorge flood of January 1959. Flooding along the Allegheny in New York and Pennsylvania was comparatively light. Flood stages along the Monongahela River were exceeded by 1 to 2 feet. River navigation was suspended for a short time, due to water overflowing the lock walls at the various locks and dams. Damages were minor over the entire Monongahela Basin.

Snowmelt during the latter part of March and shower activity during the beginning of April resulted in light flooding on the Muskingum River at Marietta, Ohio, on April 2. No damage of significance resulted from the overflow.

As the month began, the Wabash River in Indiana was above flood stage from Wabash downstream to Terre Haute and was rising from Covington downstream. This rise was due to rapid melting of the heavy snow cover during the last 5 days of the month. Crests ranged upward to as much as 7 to 8 feet above flood stage at Montezuma but diminished downstream to only slightly above bankfull at Riverton and Vincennes. The White River at Edwardsport, Ind., rose to barely above bankfull stage on the 2d. Overflow was confined to low-lying bottom lands and no residential areas were seriously threatened. Flood damage was insignificant.

Minor flooding, with little or no damage, occurred on the Skillet Fork and Saline Rivers in Illinois from snowmelt and general rains over the lower Ohio the last 2 days of March.

The main stem of the Ohio had risen to above flood stage in the reach from Pittsburgh, Pa., to McMechen, W. Va., by March 31 and at Duffy, Ohio, by April 1. Crests of 2 to 7.5 feet above flood stage occurred on April 1 as far downstream as McMechen, W. Va. Damages were held to a minimum in Pittsburgh due to action taken by local interests. At Wheeling, W. Va., flood waters affected residents living on Wheeling Island and caused some flooding to the Wheeling Downs Racetrack. There was no flooding in the reach from below Duffy, Ohio, to above Newburgh, Ind. In the lower reach from Newburgh, Ind., to Cairo, Ill., flood stage was exceeded by up to 7.4 feet at the mouth. There was some damage in the lower Ohio to roads and bridges. Most personal property had been moved to safety. There was some agricultural damage.

Arkansas Basin.--The only flooding reported in the Arkansas Basin was on Deep Fork Creek at Dewar, Okla., between the 15th and 24th. This rise was due to heavy rains on the 13th and 14th. No damage was reported. This storm caused moderate rises on all streams in north-central and northeast Oklahoma and in southeast Kansas. Bird Creek crested just under flood stage at Sperry, Okla. Only minor rises were reported on the Arkansas River above Muskogee, Okla., while downstream at Van Buren, Ark., it crested about 5 feet below flood stage.

Lower Mississippi Basin.--The Mississippi River exceeded flood stage by 3 to 4 feet in the reach from below the mouth of the Ohio River to Caruthersville, Mo., between the 6th and 21st. This flood developed as a result of rapid snowmelt and heavy rains, in the Missouri, upper Mississippi, and upper Ohio Valleys. Considerable snow had accumulated in these areas during the winter months and an unseasonably cold period during March prevented normal thawing of snow and ice, this being the coldest March of record at many stations. During the last week in March, above normal temperatures caused a rapid melting of ice and snow; also some rather heavy rains occurred in the upper Mississippi and Missouri Valleys which increased the amount of water available, hastened the snowmelt, and developed the flood.

WEST GULF OF MEXICO DRAINAGE

Locally heavy rain over the northeast portion of Tarrant County in Texas on the afternoon of the 24th caused some flash flooding along Fossil Creek. There was some flooding of the Richland Hills residential area of Fort Worth which resulted in some precautionary evacuations. There was no appreciable damage.

Flood stages were reached on the lower Colorado in Texas at and below Columbus on April 30 to May 2. There was some flash flooding on Cumins Creek, just above Columbus, and on Cedar Creek between Austin and Smithville on the 29th. Most of the excessive rain that caused this flood began during the night of April 28-29, and ended by noon of the 29th. Rainfall ranged from 0. 32 inch at Austin to 5. 5 inches at Smithfield. Flood damages were minor.

The excessive rains during the morning of the 29th caused the Guadalupe River at Gonzales, Tex., to rise rapidly during the afternoon of the 30th to a crest of 31. 2 feet, 11. 2 feet above flood stage by around midnight. Considerable flash flooding occurred on the lower San Marcos River and on Plum Creek during the afternoon of the 29th and the morning of the 30th. Some damage occurred in the Gonzales area on the Guadalupe, mostly to growing crops. Damage below Gonzales was very light.

PACIFIC SLOPE DRAINAGE

Columbia Basin.--Record to near record high temperatures during the first 10 days of April caused the low elevation snowpack to melt, producing above average streamflow in practically all parts of the Columbia Basin north of the Payette River. The Spokane and other low elevation drainages experienced their peak discharge during this period.

Precipitation during April ranged from 125 to 200 percent of the April normal over the Cascade Range, western Oregon and Washington from the Willamette Valley northward to the Canadian Border. Precipitation was also considerably above normal over northeastern Washington and northern Idaho and locally in the upper Columbia Basin and along the Continental Divide. Precipitation was considerably below normal over much of eastern Oregon and southern Idaho, especially in southern Idaho where several stations reported less than 10 percent of the normal April amount.

No serious high water was reported during April.

FLOOD STAGE DATA

(All dates in April unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From–	To–	Stage	Date
	Ft.			Ft.	
HUDSON BAY DRAINAGE					
Red River of the North: Moorhead, Minn.	17	9	10	17.7	9
Grand Forks, N. Dak.	28	11	14	28.9	12
Drayton, N. Dak.	32	10	18	34.1	14
ST. LAWRENCE DRAINAGE					
Lake Michigan					
Red Cedar: Williamston, Mich.	7	Mar. 28	2	9.4	Mar. 31
East Lansing, Mich.	7	Mar. 29	3	9.2	Mar. 31
Grand: Lansing, Mich.	11	Mar. 30	2	12.1	1
Ionia, Mich.	21	Mar. 31	4	23.4	1
Lowell, Mich.	15	Mar. 31	5	17.4	2
Grand Rapids, Mich.	18	Mar. 31	7	19.25	3
Lake Huron					
Flint: Flint, Mich.	11	Mar. 30	4	13.2	1
Chippewa: Mt. Pleasant, Mich.	13	Mar. 30	1	13.3	Mar. 31
Shiawassee: Owosso, Mich.	7	Mar. 28	6	8.4	1
Tittabawassee: Midland, Mich.	18	Mar. 31	3	20.7	1
Saginaw: Saginaw, Mich.	19	1	7	20.5	3
Lake Erie					
St. Joseph: Montpelier, Ohio	10	Mar. 30	2	11.7	Mar. 31
Lake Ontario					
Canaseraga Creek: Groveland, N.Y.	11	Mar. 29	1	13.4	Mar. 30-31
Oatka Creek: Garbutt, N. Y.	5	Mar. 30	5	8.55	Mar. 31
Black Creek: Churchville, N. Y.	5	Mar. 30	5	9.4	Mar. 31
Genesee: Scio, N. Y.	8	Mar. 29	1	9.4	Mar. 31
Rochester, N. Y.	13	Mar. 31	2	14.6	Mar. 31
ATLANTIC SLOPE DRAINAGE					
Sun Cook: North Chichester, N.H.	10	5	7	12.05	5
Nashua: East Pepperell, Mass.	8	4	8	10.6	6
Merrimack: Penacook, N. H.	7	5	7	7.9	6
Concord, N. H.	12	5	8	14.65	6
Bow (Garvins Falls), N. H.	6	6	8	6.7	6
Manchester, N. H.	7	5	9	8.8	6
Lawrence, Mass.	20	5	8	24.6	6
Charles: Charles River Village, Mass.	4	6	10	4.3	[illegible]
Neponset: Norwood, Mass.	9	1	2	9.25	1
Housatonic: Great Barrington, Mass.	9	4	6	E9.7	5
Gaylordsville, Conn.	8	3	9	11.1	5
Westfield: Westfield, Mass.	12	4	5	12.4	5
Farmington: Simsbury, Conn.	12	5	8	13.7	6
Connecticut: White River Junction, Vt.	18	4	7	21.2	5
Montague City, Mass.	28	1	8	37.9	6
Holyoke, Mass.	9	4	8	12.0	6
Springfield, Mass.	20	6	6	20.0	6
Hartford, Conn.	16	1 15	11 23	27.6 19.0	7 17
Middletown, Conn.	9	2 15	12 24	20.5 11.9	7 18
Hoosic: Eagle Bridge, N. Y.	10	Mar. 31	1	11.45	Mar. 31
Schoharie: Middleburg, N. Y.	12	Mar. 31	1	13.2	Mar. 31
Esperance, N. Y.	15	Mar. 31	1	17.45	Mar. 31
Hudson: Troy, N. Y.	15	1	1	15.9	1
Passaic: Little Falls, N. J.	126	5	9	127.2	7
Millstone: Blackwells Mills, N.J.	7	5	5	7.6	5
Raritan: Manville, N. J.	12	4	4	12.5	4
ATLANTIC SLOPE DRAINAGE (Cont'd.)					
Raritan (Cont'd.): Boundbrook, N. J.	8	4 5	4 5	8.2 8.1	4 5
Chenango: Sherburne, N. Y.	8	Mar. 31	5	9.4	Mar. 31
Greene, N. Y.	13	Mar. 31	5	15.0	1
Whitney Point, N. Y.	12	Mar. 31	10	15.2	1
Chenango Forks, N. Y.	10	Mar. 31	2	12.0	1
Chemung: Elmira, N. Y.	10	Mar. 29	1	14.5	1
Chemung, N. Y.	12	Mar. 29 4	2 5	19.1 13.4	Mar. 31 4
West Branch Susquehanna: Williamsport, Pa.	20	Mar. 31	2	20.9	1
Susquehanna: Unadilla, N. Y.	11	1	7	14.05	5
Bainbridge, N. Y.	13	Mar. 31	7	20.6	5
Conklin, N. Y.	11	Mar. 31	8	17.0	6
Binghamton, N. Y.	14	Mar. 31	5	16.3	5
Vestal, N. Y.	18	Mar. 31	7	23.2	5
Towanda, Pa.	16	Mar. 30	6	22.9 18.0	1 5
Wilkes-Barre, Pa.	22	Mar. 31	7	29.6 25.2	1 5
Danville, Pa.	20	Mar. 31	7	23.9 22.1	2 5
Sunbury, Pa.	16	Mar. 31	3	18.6	2
Harrisburg, Pa.	17	1	3	18.2	2
Potomac: Washington, nr, D. C.	12	1 5	1 7	12.3 13.4	1 6
Jackson: Covington, Va.	7	4	5	7.0	4-5
Rivanna: Palmyra, Va.	A15	5	6	E17.0	5-6
James: Bremo Bluff, Va.	18	Mar. 30 4	2 7	23.9 23.6	1 6
Columbia, Va.	18	Mar. 30 5	2 7	23.8 25.1	1 6
Richmond, Va. (Westham)	12	Mar. 31 5	3 8	14.9 15.7	2 7
Richmond, Va. (City Locks)	9	1 6	2 [illegible]	10.8 12.2	2 7
Roanoke: Altavista, Va.	18	5	5	18.95	5
Randolph, Va.	21	6	7	24.25	6
Tar: Tarboro, N. C.	19	10	10	#19.1	10
Greenville, N. C.	13	9	12	#13.5	11
Neuse: Neuse, N. C.	14	1	9	17.9	7
Smithfield, N. C.	13	1	11	18.95	8
Goldsboro, N. C.	14	5	16	19.8	11
Kinston, N. C.	14	Mar. 24 7	1 18	15.6 16.55	Mar. 29 14
Cape Fear: Moncure, N. C.	20	6	6	20.9	6
Fayetteville, N. C.	35	5	8	42.9	7
Lock #2, Elizabethtown, N. C.	20	1	10	31.4	8
Yadkin: Yadkin College, N. C.	18	Mar. 31 5	1 6	18.2 19.5	Mar. 31 6
Rocky: Norwood, N. C.	16	Mar. 31 4	1 7	E18.0 E20.5	Mar. 31 5-6
Lynches: Effingham, S. C.	14	5	12	15.3 16.2	6 10
Waccamaw: Conway, S. C.	7	5 13	9 19	7.1 7.2	6-8 16-17
Pee Dee: Cheraw, S. C.	30	Mar. 31 4	2 8	36.0 38.9	Mar. 31-1 5
Peedee, S. C.	19	Mar. 11	18	26.4	10
Black: Kingstree, S. C.	12	7	12	12.5	9-11
Saluda: Pelzer, S. C.	6	Mar. 30	8	8.2	1
Broad: Blair, S. C.	14	Mar. 30 5	2 6	20.6 17.8	1 5
Catawba: Catawba, S. C.	8	Mar. 31 4	1 5	9.8 12.2	1 5

FLOOD STAGE DATA

(All dates in April unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From–	To–	Stage	Date
	Ft			Ft	
ATLANTIC SLOPE DRAINAGE(Cont'd.)					
Wateree: Camden, S. C.	23	5	7	28.6	[illegible]
North Fork Edisto: Orangeburg, S. C.	8	Mar. 31	12	10.3	[illegible]
Edisto: Givhans, S. C.	10	3	20	14.3	11
Savannah: Millhaven, Ga.	15	4	18	18.1	9
Clyo, Ga.	11	Jan. 9	1	13.1	Jan.18-20
				16.6	Feb. 8
				17.3	Feb.18-20
				17.0	Feb. 29
				17.0	Mar. 5
				17.2	11-12
Ogeechee: Midville, Ga.	6	3	10	7.8	6
Dover, Ga.	7	5	16	10.9	[illegible]
Ocmulgee: Macon, Ga.	18	Mar. 31	1	19.6	31
		6	6	18.9	6
Abbeville, Ga.	12	4	15	16.0	6-7
Lumber City, Ga.	15	6	14	18.1	10
Oconee: Milledgeville, Ga.	20	Mar. 31	1	25.5	Mar. 31
		5	5	25.0	5
Dublin, Ga.	21	4	9	22.8	5
Mount Vernon, Ga.	16	5	14	19.8	7
Altamaha: Charlotte, Ga.	15	5	21	22.2	9-10
Satilla: Waycross, Ga.	16	6	13	19.6	9
Atkinson, Ga.	13	8	22	19.2	12
EAST GULF OF MEXICO DRAINAGE					
Chattahoochee: Eufaula, Ala.	40	4	8	45.7	5
Fort Gaines, Ga.	38	5	7	43.5	6
Columbia, Ala	42	5	7	44.3	6
Flint: Albany, Ga.	20	4	12	31.1	7
Newton, Ga.	24	4	12	30.9	8
Bainbridge, Ga.	25	5	14	30.7	[illegible]
Apalachicola: Woodruff Dam, Fla.	66	3	11	72.1	8
Blountstown, Fla.	15	Mar. 31	29	24.3	9
Pea: Elba, Ala.	30	5	6	31.5	5
Choctawhatchee: Newton, Ala.	19	4	6	24.7	5
Geneva, Ala.	23	4	10	29.7	6
Caryville, Fla.	12	3	13	16.0	7
Conecuh: River Falls, Ala.	37	2	7	41.4	4
Brewton, Ala.	17	4	10	21.0	5-6
Alabama: Millers Ferry, Ala.	40	4	8	41.5	7
Claiborne, Ala.	40	5	10	40.8	7-8
East Fork Tombigbee: Fulton, Miss.	16	4	5	16.0	4,5
Noxubee: Macon, Miss.	20	3	4	20.4	4
Tombigbee: Lock 3, Whitfield, Ala.	33		8	42.2	5
Lock 2, Pennington, Ala.	46	5	5	46.1	5
Lock 1, Jackson, Ala.	31	2	9	33.7	6
Pascagoula: Merrill, Miss.	22	6	8	22.3	7
Pearl: Jackson, Miss.	18	10	10	18.1	10
Bogalusa, La.	15	Jan. 7	10	16.7	Jan. 10
				17.4	Jan. 22
				18.7	Feb. 10
				18.5	Feb. 23
				19.2	Mar. 22
				18.4	4
Pearl River, La.	12	Mar. 6	9	14.8	Mar. 24
				14.4	7
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Yellow Medicine: Granite Falls, nr., Minn.	6	Mar. 30	4	7.4	1
		7	11	7.2	9
Redwood: Redwood Falls, nr., Minn.	6	Mar. 28	2	10.8	Mar. 30
Cottonwood: New Ulm, nr., Minn.	11	Mar. 29	4	12.1	Mar. 30
				11.4	4
MISSISSIPPI SYSTEM (Cont'd.)					
Upper Mississippi Basin (Cont'd.)					
Minnesota: Montevideo, Minn.	14	3	14	14.8	5
Carver, Minn.	18	3	24	22.4	8
				21.7	17
Chaska, Minn.	17	4	24	20.9	8
				20.0	17
Savage, Minn.	698	4	24	700.55	10
				699.8	18
Turkey: Garber, Iowa	11	Mar. 28	1	23.25	Mar. 29
		16	19	15.55	18
Maquoketa: Maquoketa, Iowa	13	Mar. 30	2	19.0	Mar. 31
Wapsipinicon: DeWitt, Iowa		Mar. 30	9	11.7	3
	10	22	26	10.25	25
East Branch Pecatonica: Blanchardville, Wis.	11	Mar. 30	Mar. 31	14.2	Mar. 30
Pecatonica: Darlington, Wis.	11	Mar. 29	1	16.2	Mar. 30
Martintown, Wis.	11	Mar. 30	7	19.6	1
Freeport, Ill.	13	Mar. 31	6	16.35	2
Shirland, Ill.	E10	Mar. 30		E17.0	2
Rock: Moline, Ill.	13	Mar. 30	9	11.7	3
		20	21	13.05	21
Cedar: Waterloo, Iowa	15	Mar. 30	1	18.1	Mar. 31
Cedar Rapids, Iowa	13	1	4	16.8	2
Iowa: Steamboat Rock, Iowa	10	Mar. 29	2	12.5	Mar. 31
Marshalltown, Iowa	13	Mar. 30	6	17.5	Mar. 31
		17	19	14.1	18
Wapello, Iowa	10	Mar. 30	10	17.1	6
		22	24	10.1	23
North Skunk: Sigourney, Iowa	14	Mar. 29	5	25.3	Mar. 31
Skunk: Oskaloosa, Iowa	15	Mar. 29	8	20.3	3
Augusta, Iowa	15	Mar. 28	9	23.0	3
		15	15	15.3	15
Boone: Webster City, Iowa	10	Mar. 29	1	12.1	Mar. 30
North Raccoon: Jefferson, Iowa	10	Mar. 29	7	19.4	Mar. 31
South Raccoon: Redfield, Iowa	14	1	2	14.4	1
Raccoon: Van Meter, Iowa	13	Mar. 30	5	21.2	2
Des Moines, Iowa	12	Mar. 30	6	18.8	2
North: Norwalk, Iowa	14	Mar. 28	2	21.0	Mar. 30
Middle: Indianola, Iowa	15	Mar. 28	1	20.4	Mar. 30
South: Ackworth, Iowa	15	Mar. 28	Mar. 31	22.6	Mar. 30
Des Moines: Fort Dodge, Iowa	10	Mar. 29	Mar. 30	11.3	Mar. 29
Boone, Iowa	12	Mar. 29	2	17.1	Mar. 31
Des Moines, Iowa	23	Mar. 31	3	25.3	1,2
Des Moines (Scott St.), Iowa	13	Mar. 30	6	20.0	2
Tracy, Iowa	14	Mar. 28	9	22.3	Mar. 31
				23.0	2
Eddyville, Iowa	15	Mar. 28	9	23.7	Mar. 31
				24.0	4
Ottumwa, Iowa	9	Mar. 29	9	17.5	1
				17.4	4
Keosauqua, Iowa	15	Mar. 30	7	18.4	2
				18.2	5
Fox: Wayland, Mo.	15	Mar. 29	1	18.7	Mar. 31
Salt: New London, Mo.	19	Mar. 29	Mar. 31	22.6	Mar. 30
Fox: Dayton, Ill.	12	Mar. 29	3	14.8	Mar. 31
Vermillion: Lowell, Ill.	10	Mar. 29		12.1	Mar. 30
Spoon: Seville, Ill.	22	Mar. 30	4	26.0	Mar. 31
Sangamon: Riverton, Ill.	13	Mar. 28	9	20.1	1
		16	27	16.3	18
Petersburg, Ill.	497	Mar. 31	5	499.0	2
Oakford, Ill.	471	2	2	471.05	2
LaMoine: Ripley, Ill.	22	Mar. 29	4	25.8	1
Illinois: Morris, Ill.	13	Mar. 28	2	15.4	Mar. 31

FLOOD STAGE DATA

(All Dates in April unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
	Ft.			Ft.	
MISSISSIPPI SYSTEM (Cont'd.)					
Upper Mississippi Basin (Cont'd.)					
Illinois (Cont'd.): LaSalle, Ill.	20	Mar. 28 17	12 24	25.9 22.6	Mar. 31 19
Peoria, Ill.	18	Mar. 31	28	21.6 19.7	5 21
Havana, Ill.	14	Mar. 30 Mar. 31	Mar. 31 May 11	20.0 18.2	6 22
Beardstown, Ill.	14	Mar. 30	May 12	21.8 20.0	6-8 22
Meredosia, Ill.	10	Mar. 30	1/	20.95	8
Kaskaskia: Vandalia, Ill.	18	Mar. 28	3	21.2	Mar. 31
Carlyle, Ill.	21	Mar. 30	9	25.0	3
Big Muddy: Murphysboro, Ill.	16	Mar. 23	18	E18.3 20.9	Mar. 27 4
Mississippi: Keithsburg, Ill.	12	Mar. 30 20	10 27	16.6 12.8	4 22
Burlington, Iowa	15	Mar. 31	9	18.7	4
Keokuk, Iowa	16	Mar. 31	10	21.85	3
Gregory Landing, Mo.	15	Mar. 31	11	22.3 19.8	4 6
Quincy, Ill.	17	Mar. 31	13	24.4 23.95	4 7
Hannibal, Mo.	16	Mar. 31 17	14 27	23.4 16.5	4 18
Louisiana, Mo.	15	Mar. 31 17	14 26	20.9 16.15	4,8 19
Clarksville, Mo.	23	Mar. 29	1/	31.2	8
Winfield, Mo.	23	Mar. 29	1/	32.1	9
Grafton, Ill.	18	Mar. 30	28	25.7	10
Alton, Ill.	21	Mar. 31	24	29.4	10
St. Louis, Mo.	30	3	15	33.8	10
Chester, Ill.	27	1	24	33.7	11
Cape Girardeau, Mo.	32	2	24	38.2	11
Missouri Basin					
James: Huron, S. Dak.	11	Mar. 29	16	15.4	6
Little Rock: Doon, Iowa	15	Mar. 27	3	18.0 17.5	Mar. 29 3
Rock: Rock Rapids, Iowa	E10	Mar. 29	2	E13.8	Mar. 30
Rock Valley, Iowa	11	Mar. 27	7	15.0	2
Big Sioux: Sioux Falls, S. Dak.	10	Mar. 29	2	15.6	Mar. 30
Hawarden, Iowa	15	Mar. 28	10	22.3 22.1	1 3
Akron, Iowa	16	Mar. 28	16	21.6	1
Weat Branch Floyd: Struble, Iowa	14	Mar. 28 1	Mar. 30 2	14.7 14.6	Mar. 29 1-2
Floyd: Alton, Iowa	12	Mar. 27 1	Mar. 30 3	17.0 16.1	Mar. 28 2
Lemars, Iowa	20	Mar. 28 1	Mar. 30 3	22.8 21.2	Mar. 29 2
Merrill, Iowa	12	Mar. 28 1	Mar. 30 3	16.0 14.3	Mar. 29 2
James, Iowa	16	Mar. 27 1	Mar. 31 5	21.9 20.8	Mar. 28 2
Little Sioux: Spencer, Iowa	10	Mar. 28	5	13.1 13.3	Mar. 28 2
Cherokee, Iowa	18	1	3	20.0	2
Correctionville, Iowa	19	Mar. 28	5	20.2	3
North Branch Elkhorn: Pierce, Nebr.	12	Mar. 30	7	14.5	1
Elkhorn: West Point, Nebr.	12	Mar. 30	1	16.1	Mar. 31
Winslow, Nebr.	14	Mar. 31	3	18.35	1
Waterloo, Nebr.	12	1	4	14.1	2
Salt Creek: Ashland, Nebr.	11	Mar. 28	4	14.1	Mar. 30
Platte: Ashland, Nebr.	7	Mar. 29		G	
Louisville, Nebr.	9	Mar. 29	5	12.45	Mar. 31
Nishnabotna: Red Oak, Nebr.	15	Mar. 29	1	16.4	Mar. 30

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
	Ft.			Ft.	
MISSISSIPPI SYSTEM (Cont'd.)					
Missouri Basin (Cont'd.)					
Tarkio: Fairfax, Mo.	17	Mar. 28	Mar. 30	19.8	Mar. 29
Nemaha: Falls City, Nebr.	20	Mar. 27	Mar. 29	27.7	Mar. 28
Nodaway: Clarinda, Mo.	14	Mar. 28	Mar. 30	18.6	Mar. 30
One Hundred Two: Maryville, Mo.	14	Mar. 28	Mar. 31	16.3	Mar. 29
Platte: Agency, Mo.	20	Mar. 28	2	26.1	Mar. 31
Solomon: Beloit, Kans.	20	2	2	20.65	2
Glasco, Kans.	22	3	3	22.0	3
Minneapolis, Kans.	26	Mar. 28	2	28.6 30.1	Mar. 28 Mar. 30
Niles, Kans.	24	Mar. 27	3	28.95	Mar. 31
Smoky Hill: Abilene, Kans.	22	Mar. 30	3	23.8	1
Enterprise, Kans.	21	Mar. 31	3	22.6	2
Turkey Creek: Wilber, Nebr.	12	Mar. 28	5	20.1	Mar. 28
Little Blue: Deweese, Nebr.	6	1	2	8.2	1
Big Blue: Ulysses, Nebr.	15	Mar. 28	1	20.5	29-30
Seward, Nebr.	18	Mar. 29	Mar. 31	19.7	Mar. 30
Crete, Nebr.	16	Mar. 28	5	28.0	Mar. 30
Beatrice, Nebr.	16	Mar. 27	4	24.35 25.7	Mar. 29 Mar. 31
Barneston, Nebr.	18	Mar. 27	4	27.6	Mar. 28
Marysville, Kans.	35	Mar. 27	4	40.2	Mar. 29
Blue Rapids, Kans.	20	Mar. 27	5	32.7 35.3	Mar. 28 Mar. 30
Randolph, Kans.	22			28.1	Mar. 28
Stranger Creek: Tonganoxie, Kans.	23	Mar. 27	1	26.85	Mar. 29
Kansas: Manhattan, Kans.	17	Mar. 27	5	21.2	Mar. 29
Thompson Fork: Trenton, Mo.	20	Mar. 29	3	21.1	Mar. 30
Grand: Pattonsburg, Mo.	25	Mar. 28	1	30.8	Mar. 30
Gallatin, Mo.	21	Mar. 28	1	30.4	Mar. 31
Chillicothe, Mo.	24	Mar. 28	3	31.4	Mar. 31
Sumner, Mo.	26	Mar. 28 15 17	6 16 21	37.2 26.4 30.7	1 15 19
Brunswick, Mo.	12	Mar. 28	22	24.1	1
Chariton: Novinger, Mo.	20	Mar. 28	6	26.7	2
Prairie Hill, Mo.	15	Mar. 28	7	20.2	4
Lamine: Clifton City, Mo.	19	16	18	26.2	17
Blackwater: Blue Lick, Mo.	25	Mar. 28 17	1 23	29.4 32.4	Mar. 30 20
South Grand: Brownington, Mo.	19	17	23	30.4	19
Marais des Cygnes: LaCygne, Kans.	25	Mar. 25	1	29.3	Mar. 29
Trading Post, Kans.	24	Mar. 27	1	25.85	Mar. 31
Osage: Schell City, Mo.	25	Mar. 22 15 30	4 21 1/	29.2 28.1	Mar. 27 19
Missouri: Nebraska City, Nebr.	18	Mar. 31	9	21.3	5
Rulo, Nebr.	17	Mar. 30	11	22.5	6
St. Joseph, Mo.	17	Mar. 29	11	22.0	6
Atchinson, Kans.	22	Mar. 31	11	25.0	7
Leavenworth, Kans.	19	Mar. 30	11	21.9	4,7
Kansas City, Mo.	22	Mar. 30	7	22.9	4
Lexington, Mo.	22	Mar. 29	13	27.6	5
Waverly, Mo.	18	Mar. 29	13	25.8	3
Boonville, Mo.	21	Mar. 29	14	28.2	5
Jefferson City, Mo.	23	Mar. 31	13	27.3	6
Hermann, Mo.	21	Mar. 29	21	28.4	7
St. Charles, Mo.	25	Mar. 29	22	32.2	8
Ohio Basin					
French Creek: Meadville, Pa.	57	Mar. 30	2	60.8	1

FLOOD STAGE DATA

(All Dates in April unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft.			Ft.	
MISSISSIPPI SYSTEM (Cont'd.)					
Ohio Basin (Cont'd.)					
Allegheny: Olean, N. Y.	10	Mar. 30	4	13.1	1
Salamanca, N. Y.	10	Mar. 30	1	10.6	Mar. 31
Warren, Pa.	17	Mar. 31	1	18.0	Mar. 31
Franklin, Pa.	17	Mar. 31	1	18.0	Mar. 31
Lock 9, Rimerton, Pa.	21	Mar. 31	1	21.9	Mar. 31
Lock 8, Mosgrove, Pa.	24	Mar. 31	1	24.8	Mar. 31
Lock 7, Kittanning, Pa.	23	Mar. 31	1	23.2	Mar. 31
Lock 5, Freeport, Pa.	21	Mar. 30	3	23.8	Mar. 31
Lock 4, Natrona, Pa.	20	Mar. 31	2	21.4	Mar. 31
Lock 3, Acmetonia, Pa.	20	Mar. 31	2	20.9	1
Cheat: Parsons, W. Va.	11	3	4	12.4	4
Monongahela: Lock 4, Charleroi, Pa.	24	Mar. 31	1	26.0	Mar. 31
McKeesport, Pa.	12	Mar. 31		13.3	Mar. 31
Lock 2, Braddock, Pa.	26	Mar. 31	1	27.3	Mar. 31
Shenango: Sharon, Pa.	12	Mar. 30	1	12.8	Mar. 31
Muskingum: Marietta, Ohio	35	2	2	35.2	2
Greenbrier: Alderson, W. Va.	14	Mar. 31	Mar. 31	14.4	Mar. 31
Skillet Fork: Wayne City, Ill.	15	Mar. 30	2	17.9	Mar. 31
White: Edwardsport, Ind.	15	2	2	15.1	2
Wabash: Wabash, Ind.	12	Mar. 29	1	15.65	Mar. 29
Lafayette, Ind.	11	Mar. 29	3	E18.5	Mar. 30
Covington, Ind.	16	Mar. 30	4	21.8	1
Montezuma, Ind.	14	Mar. 29	5	21.65	3
Clinton, Ind.	18			20.2	3
Terre Haute, Ind.	14	Mar. 30	6	17.3	3
Hutsonville, Ind.	20	5	6	20.4	5
Riverton, Ind.	18	6	6	18.0	6
Vincennes, Ind.	16	7	7	16.1	7
Saline: Harrisburg, Ill.	13	Mar. 31	1		

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft.			Ft	
MISSISSIPPI SYSTEM (Cont'd.)					
Ohio Basin (Cont'd.)					
Tennessee: Paducah, nr., Tenn.	34	5	17	36.1	7
Ohio: Pittsburgh, Pa.	25	Mar. 31	2	27.7	1
Dashields Dam, Pa.	26	Mar. 31	1	28.2	1
Montgomery Dam, Pa.	32	Mar. 31	1	35.1	1
Dam 7, Midland, Pa.	30	Mar. 31	2	37.6	1
Dam 8, Newell, W. Va.	32	Mar. 31	2	36.8	1
Dam 9, New Cumberland, W. Va.	34	Mar. 31	2	36.0	1
Dam 10, Steubenville, Ohio	33	Mar. 31	2	37.2	1
Dam 12, Wheeling, W. Va.	36	Mar. 31	2	39.5	1
Dam 13, McMechen, W. Va.	37	Mar. 31	3	42.1	1
Dam 15, Duffy, Ohio	37	1	3	38.7	2
Dam 47, Newburgh, Ind.	38	7	13	38.8	10
Mt. Vernon, Ind.	35	10	12	35.1	11
Shawneetown, Ill.	33	6	16	36.0	11
Dam 50, Fords Ferry, Ky.	34	5	17	37.9	11
Dam 52, Brookport, Ill.	37	7	16	37.7	15
Dam 53, Grand Chain, Ill.	42	5	19	46.3	13
Cairo, Ill.	40	3	22	47.4	13
Arkansas Basin					
Deep Fork: Dewar, Okla.	18	15	24	19.2	15
Lower Mississippi Basin					
Mississippi: New Madrid, Mo.	34	7	19	37.0	15
Caruthersville, Mo.	32	6	21	35.9	14-16
WEST GULF OF MEXICO DRAINAGE					
Colorado: Columbus, Tex.	24	30	30	27.0	30
Wharton, Tex.	26	May 2	May 2	26.0	May 2
Guadalupe: Gonzales, Tex.	20	30	May 2	31.2	30
Victoria, Tex.	21	May 3	May 6	23.8	May 5

*	Tentative
E	Estimated
1/	Continued at end of month
G	Gage washed away
#	Highest stage observed
A	Tentative flood stage

RAWINSONDE DATA

Average monthly values

APRIL 1960

ALBANY, N. Y. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	86	6.2	79	227	3.3
1,000	30	122			231	3.9
950	30	544	5.6	72	245	6.0
900	30	985	4.5	73	275	13.2
850	30	1,449	2.9	72	283	19.6
800	30	1,939	1.1	63	287	22.2
750	30	2,455	- 1.2	60	283	24.5
700	30	3,004	- 4.1	60	279	27.4
650	30	3,584	- 7.0	53	278	29.5
600	30	4,206	-10.6	53	276	31.5
550	30	4,865	-14.7	46	277	35.6
500	30	5,585	-19.3	45	276	35.2
450	30	6,354	-24.5	41	277	40.4
400	30	7,209	-30.6	39	277	43.3
350	30	8,144	-37.6		276	47.0
300	30	9,192	-44.4		273	49.7
250	30	10,395	-51.7		274	50.3
200	29	11,822	-57.7		276	50.7
175	29	12,664	-58.1		278	49.5
150	28	13,639	-56.2		275	45.9
125	28	14,798	-56.2		273	41.6
100	28	16,212	-57.5		273	35.8
80	28	17,622	-57.4		273	32.1
60	27	19,439	-56.0		273	18.3
50	27	20,600	-54.9		273	14.2
40	26	22,027	-53.2		261	13.6
30	25	23,897	-50.4		256	15.2
25	24	25,093	-48.7		268	15.7
20	23	26,561	-47.5		274	15.5
15	22	28,471	-46.1		274	16.7
10	16	31,190	-44.1		283	22.0
7	7	33,522	-40.1			
5						

ALBUQUERQUE, N. MEX. (837 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,619	7.8	38	63	2.1
1,000	30	117				
950	30	550				
900	30	1,011				
850	30	1,489				
800	30	1,993	8.9	29	278	3.1
750	30	2,523	5.7	32	285	10.7
700	30	3,085	1.9	35	286	13.0
650	30	3,672	- 2.5	38	275	15.9
600	30	4,308	- 6.7	37	268	16.9
550	30	4,971	-11.0		266	20.0
500	30	5,708	-16.4		283	22.3
450	30	6,480	-22.1		281	22.5
400	30	7,350	-28.8		279	27.6
350	30	8,291	-36.0		288	26.2
300	30	9,344	-43.9		304	23.7
250	30	10,546	-52.1		292	26.6
200	27	11,967	-59.2		290	32.6
175	26	12,804	-59.7		287	34.4
150	26	13,770	-59.1			
125	26	14,909	-60.8			
100	26	16,289	-63.2			
80	26	17,659	-63.3			
60	26	19,433	-60.8			
50	26	20,573	-58.2			
40	26	21,983	-56.4			
30	22	23,824	-54.1			
25	22	24,997	-52.6			
20	21	26,441	-49.7			
15	15	28,338	-45.9			
10						
7						
5						

AMARILLO, TEX. (890 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,095	8.6	69	222	5.1
1,000	30	114				
950	30	545				
900	30	1,000				
850	30	1,476	10.9	49	244	11.3
800	30	1,980	10.0	30	271	13.2
750	30	2,508	7.2	25	280	16.7
700	30	3,078	3.3	28	278	17.9
650	30	3,667	- 1.2	30	279	20.2
600	30	4,308	- 6.0	32	268	21.6
550	30	4,972	-10.9		264	23.7
500	30	5,709	-16.3		260	24.7
450	30	6,482	-22.2		263	26.6
400	30	7,349	-28.6		264	31.5
350	30	8,291	-35.8		269	32.8
300	30	9,345	-43.8		271	37.7
250	30	10,547	-52.2		273	41.8
200	30	11,966	-59.3		273	43.7
175	30	12,800	-59.9		273	43.9
150	30	13,765	-58.9		271	40.2
125	29	14,906	-60.0		270	37.1
100	29	16,292	-61.6		270	28.2
80	28	17,669	-62.9		271	17.9
60	26	19,447	-60.5		295	5.4
50	26	20,589	-58.6		307	3.7
40	24	21,998	-56.4		288	2.5
30	23	23,836	-53.5		267	3.3
25	23	25,014	-51.8		276	6.0
20	15	26,462	-49.5		260	15.2
15	6	28,315	-47.5			
10						
7						
5						

ANCHORAGE, ALASKA (1002 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	30	- 0.8	75	285	1.0
1,000	30	46			278	.6
950	30	452	- 1.5	66	103	1.9
900	30	884	- 3.5	66	128	5.8
850	30	1,334	- 6.3	69	141	9.3
800	30	1,805	- 9.5	71	147	11.9
750	30	2,298	-12.5	72	156	15.9
700	30	2,825	-15.6	63	164	18.5
650	30	3,376	-19.2	58	171	19.2
600	30	3,972	-22.9	54	178	20.6
550	30	4,601	-26.7	51	179	21.2
500	30	5,287	-31.1	52	182	22.2
450	30	6,019	-35.1	51	186	23.1
400	30	6,835	-41.8		189	26.2
350	30	7,730	-46.4		189	28.6
300	30	8,742	-50.5		195	28.6
250	30	9,930	-50.1		197	23.7
200	30	11,400	-46.6		203	19.0
175	30	12,288	-46.0		202	16.5
150	30	13,316	-45.2		197	14.4
125	30	14,532	-45.7		193	14.2
100	30	16,016	-46.3		184	10.3
80	30	17,499	-46.2		173	7.6
60	30	19,411	-46.3		140	7.4
50	30	20,622	-46.5		122	8.9
40	30	22,103	-46.5		105	11.9
30	28	24,020	-46.3		94	17.5
25	27	25,229	-46.4		89	22.9
20	27	26,709	-46.3		87	28.2
15	26	28,620	-45.9		88	36.9
10	19	31,361	-44.6		91	46.6
7	5	33,719	-44.0			
5						

ANNETTE, ALASKA (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	37	5.8	78	139	5.1
1,000	30	80			135	5.4
950	30	497	4.2	69	145	15.0
900	30	938	1.3	70	156	18.5
850	30	1,396	- 1.6	70	162	19.0
800	30	1,876	- 4.9	70	169	21.4
750	30	2,377	- 8.3	67	176	20.4
700	30	2,914	-11.6	63	183	19.6
650	30	3,474	-15.2	62	188	18.3
600	30	4,080	-19.1	58	192	19.2
550	30	4,719	-23.1	55	198	16.5
500	30	5,416	-27.7	53	198	15.0
450	30	6,161	-32.9	49	203	13.6
400	30	6,987	-38.6		212	16.5
350	30	7,892	-44.8		201	15.3
300	29	8,915	-50.5		192	19.4
250	29	10,095	-53.2		203	20.4
200	29	11,541	-50.3		212	10.3
175	29	12,415	-49.1		219	9.1
150	29	13,428	-48.7		232	9.5
125	26	14,624	-49.7		226	8.4
100	26	16,081	-50.7		239	5.2
80	25	17,534	-51.3		198	3.7
60	25	19,402	-51.1		143	2.3
50	25	20,587	-51.2		84	4.1
40	25	22,036	-51.5		89	7.2
30	25	23,901	-51.8		68	10.5
25	23	25,074	-51.9		76	14.8
20	21	26,515	-51.7		73	14.2
15	20	28,383	-50.7		74	15.0
10	15	30,981	-49.4		75	24.7
7	11	33,310	-46.5			
5	6	35,498	-41.4			

ATHENS, GA. (989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	246	11.9	87	228	0.8
1,000	28	156				
950	28	591	14.7	65	262	4.1
900	28	1,046	12.7	58	258	6.4
850	28	1,523	9.8	59	258	9.9
800	28	2,025	7.1	55	256	12.0
750	28	2,549	4.4	50	249	14.0
700	28	3,113	1.9		250	16.3
650	28	3,703	- 1.2		255	19.4
600	28	4,342	- 4.8		257	22.9
550	28	5,014	- 9.4		259	26.6
500	28	5,751	-14.4		261	28.8
450	28	6,534	-20.1		255	30.5
400	28	7,404	-26.6		255	31.9
350	28	8,355	-33.5		261	34.2
300	28	9,419	-41.7		258	36.9
250	28	10,630	-51.0		261	41.6
200	28	12,051	-59.3		262	47.8
175	28	12,885	-60.2		264	45.5
150	28	13,848	-59.9		264	44.9
125	27	14,985	-61.3		261	40.0
100	27	16,360	-64.2		264	32.8
80	26	17,726	-63.9		267	22.3
60	26	19,498	-61.3		264	7.8
50	26	20,637	-58.4		273	4.3
40	24	22,049	-54.7		352	1.0
30	24	23,904	-51.6		16	.8
25	23	25,096	-49.6		130	1.9
20	21	26,562	-47.3		155	2.3
15	15	28,475	-44.1		171	2.7
10	5	31,211	-41.4			
7						
5						

BARROW, ALASKA (1020 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	8	-21.9	58	49	4.3
1,000	30	155	-20.3	67	57	7.2
950	30	538	-18.6	69	66	9.5
900	30	941	-16.6	65	70	8.5
850	30	1,371	-16.2	61	63	7.8
800	30	1,827	-17.1	58	76	7.6
750	30	2,303	-18.9	56	77	6.4
700	30	2,821	-21.4	55	84	6.2
650	30	3,357	-24.5	52	86	4.7
600	30	3,944	-27.7	47	105	4.3
550	30	4,561	-31.4	43	108	4.1
500	30	5,236	-35.1		112	3.9
450	30	5,958	-39.7		146	3.1
400	30	6,762	-44.8		113	2.9
350	30	7,647	-49.0		179	1.7
300	30	8,654	-50.9		203	5.8
250	30	9,845	-49.4		216	8.9
200	30	11,319	-46.1		218	8.4
175	30	12,210	-45.0		224	9.7
150	30	13,242	-44.0		218	11.1
125	30	14,468	-43.5		220	10.3
100	30	15,970	-43.2		225	8.9
80	29	17,471	-43.0		226	7.0
60	28	19,408	-42.8		221	3.7
50	28	20,638	-42.7		210	1.9
40	27	22,141	-42.6		85	1.9
30	27	24,084	-42.1		73	4.5
25	24	25,321	-41.6		76	6.8
20	22	26,826	-41.1		85	8.4
15	19	28,772	-40.7		66	16.3
10	9	31,563	-39.3			
7						
5						

BARTER IS., ALASKA (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	15	-21.7	73	185	0.6
1,000	30	144	-20.1	76	92	1.6
950	30	525	-17.2	74	102	3.3
900	30	934	-14.5	68	150	2.5
850	30	1,367	-13.9	68	140	4.5
800	30	1,827	-14.4	68	167	4.5
750	30	2,309	-16.1	64	196	4.1
700	30	2,832	-18.6	62	187	5.1
650	30	3,372	-21.8	60	208	6.8
600	30	3,965	-25.3	55	218	9.9
550	30	4,584	-29.1	49	221	12.4
500	29	5,264	-34.0		222	15.5
450	29	5,986	-38.9		223	18.3
400	29	6,794	-43.8		229	19.8
350	29	7,683	-47.8		228	22.5
300	29	8,695	-49.8		226	22.3
250	29	9,889	-49.1		222	22.0
200	28	11,365	-46.9		226	20.2
175	28	12,253	-45.1		230	18.5
150	28	13,284	-44.4		233	15.7
125	28	14,506	-44.3		234	11.1
100	28	16,003	-44.5		231	10.7
80	27	17,502	-44.2		233	9.9
60	26	19,434	-43.7		233	5.2
50	26	20,660	-43.5		297	1.7
40	26	22,160	-43.4		348	1.7
30	26	24,097	-42.8		37	9.5
25	26	25,326	-42.1		43	12.8
20	25	26,835	-41.6		54	15.2
15	25	28,789	-40.8		53	23.1
10	22	31,533	-40.2		54	32.1
7	13	33,960	-38.8		57	45.5
5	6	36,290	-36.5			

BETHEL, ALASKA (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	4	-14.3	68	346	8.9
1,000	30	68			347	10.1
950	30	459	-10.4	66	28	7.8
900	30	878	-11.5	62	26	4.1
850	30	1,316	-12.5	55	32	2.7
800	30	1,778	-13.8	47	54	1.0
750	30	2,267	-15.9	46	157	.6
700	30	2,784	-18.6	46	155	3.3
650	30	3,334	-21.6	44	191	4.3
600	30	3,920	-25.0		192	6.4
550	30	4,547	-28.7		214	6.2
500	30	5,226	-32.8		207	8.9
450	30	5,956	-37.5		223	9.1
400	30	6,768	-42.3		213	8.9
350	30	7,662	-46.9		179	6.2
300	30	8,676	-49.4		210	3.1
250	30	9,873	-48.3		192	3.7
200	30	11,353	-45.4		213	7.2
175	30	12,245	-45.0		214	8.7
150	30	13,276	-44.7		199	6.4
125	30	14,498	-44.6		198	5.4
100	30	15,990	-45.1		175	4.1
80	30	17,481	-45.1		153	6.6
60	30	19,402	-45.3		100	6.8
50	29	20,625	-45.6		102	12.4
40	29	22,112	-45.7		88	13.0
30	29	24,028	-46.0		88	17.3
25	29	25,242	-46.0		90	22.0
20	26	26,722	-46.1		88	32.4
15	24	28,658	-45.4			
10	7	31,423	-43.9			
7						
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BISMARCK, N. DAK. (954 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	505	2.0	74	346	3.3
1,000	30	125				
950	30	537			360	4.1
900	30	978	1.8	53	328	9.7
850	30	1,438	.3	52	325	13.0
800	30	1,922	- 1.8	52	314	18.3
750	30	2,430	- 4.5	52	310	21.6
700	29	2,974	- 7.5	50	307	24.5
650	29	3,543	-10.5	44	300	25.3
600	29	4,160	-14.5	44	296	27.2
550	29	4,811	-18.5	44	293	34.6
500	29	5,521	-22.9	42	282	35.6
450	29	6,278	-28.4	41	280	36.7
400	29	7,119	-34.6	40	277	41.0
350	29	8,040	-41.2		271	45.9
300	29	9,071	-48.1		270	48.8
250	29	10,255	-54.4		273	51.9
200	29	11,681	-54.7		267	48.0
175	29	12,538	-53.4		268	39.6
150	29	13,532	-52.9		268	33.8
125	28	14,704	-53.3		268	27.0
100	27	16,135	-54.3		263	22.5
80	27	17,562	-55.4		267	15.2
60	27	19,400	-54.9		287	8.5
50	27	20,566	-54.8		323	6.8
40	27	21,994	-54.3		358	5.8
30	27	23,841	-54.1		2	5.1
25	27	25,011	-53.9		11	6.0
20	26	26,441	-53.4		22	8.9
15	24	28,298	-50.6		39	9.9
10	20	30,974	-45.8		16	10.5
7	15	33,383	-41.8		12	8.0
5	9	35,670	-38.3			

BOISE, IDAHO (916 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	868	4.7	74	152	2.9
1,000	30	142				
950	30	568				
900	30	1,010	7.2	58	93	1.0
850	30	1,480	5.8	50	304	3.1
800	30	1,974	2.6	51	296	6.6
750	30	2,493	- 1.1	53	287	11.5
700	30	3,039	- 4.8	54	279	13.6
650	30	3,616	- 8.8	54	268	14.8
600	30	4,234	-12.7	49	270	18.1
550	30	4,889	-17.1	47	269	20.4
500	30	5,602	-22.0	44	263	23.5
450	30	6,366	-27.4	39	259	25.3
400	30	7,208	-33.3	41	258	28.2
350	30	8,133	-40.2		261	31.7
300	30	9,168	-47.5		262	37.3
250	30	10,356	-53.7		266	38.9
200	30	11,781	-57.0		270	38.5
175	30	12,628	-55.6		274	35.0
150	30	13,613	-55.1		277	28.8
125	30	14,771	-55.8		279	21.4
100	30	16,186	-57.3		278	15.9
80	30	17,595	-57.5		284	8.9
60	30	19,411	-57.0		291	4.1
50	30	20,566	-56.8		8	3.5
40	28	21,978	-56.8		37	3.5
30	26	23,800	-56.5		54	4.9
25	24	24,955	-56.0		63	10.5
20	22	26,378	-55.0		59	7.8
15	13	28,235	-53.5		51	5.8
10	5	30,823	-52.0			
7						
5						

BROWNSVILLE, TEX. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	7	19.6	91	151	6.4
1,000	30	115	20.2	85	157	11.5
950	30	555	18.4	80	165	19.0
900	30	1,022	18.0	61	172	16.5
850	30	1,511	16.1	52	173	12.2
800	30	2,024	13.5	45	174	9.1
750	30	2,557	10.6	38	198	4.9
700	30	3,137	7.3	31	260	4.3
650	30	3,733	3.1	31	276	8.2
600	30	4,386	- 1.9	32	286	14.8
550	30	5,062	- 7.2	31	287	17.5
500	30	5,808	-12.4		280	18.1
450	30	6,601	-18.3		273	22.9
400	30	7,473	-24.8		272	24.3
350	30	8,431	-31.7		270	32.8
300	30	9,503	-39.6		273	33.0
250	30	10,726	-48.8		280	39.8
200	30	12,163	-57.0		268	37.1
175	30	13,003	-59.4			
150	30	13,962	-62.4			
125	30	15,079	-65.9			
100	30	16,421	-69.7			
80	29	17,746	-71.1			
60	28	19,466	-65.9			
50	28	20,588	-60.6			
40	28	21,990	-56.2			
30	27	23,834	-52.3			
25	24	25,019	-50.2			
20	24	26,486	-46.7			
15	23	28,423	-41.1			
10	20	31,201	-35.2			
7						
5						

BUFFALO, N. Y. (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	182	5.1	82	209	5.4
1,000	30	119				
950	30	540	6.2	71	250	12.0
900	30	982	5.1	65	265	17.1
850	30	1,448	3.2	60	270	19.6
800	30	1,937	.9	56	267	23.3
750	30	2,453	- 1.8	55	269	25.1
700	30	3,001	- 4.5	50	273	26.2
650	30	3,581	- 7.9	46	273	28.4
600	30	4,199	-11.5	44	274	31.1
550	30	4,860	-15.3		268	33.6
500	30	5,576	-19.8		263	34.6
450	30	6,347	-25.1		267	36.7
400	30	7,197	-30.9		269	39.8
350	30	8,131	-37.6		269	47.2
300	30	9,178	-45.1		272	47.6
250	30	10,377	-52.0		272	54.2
200	30	11,802	-57.6		279	51.7
175	30	12,644	-57.6		277	44.7
150	30	13,619	-56.1		280	40.6
125	30	14,780	-56.0		275	33.4
100	30	16,195	-57.2		275	28.0
80	29	17,602	-57.8		276	21.6
60	29	19,421	-56.7		280	13.8
50	29	20,580	-55.8		274	10.9
40	27	21,999	-54.7		269	9.5
30	25	23,853	-52.4		274	10.7
25	23	25,027	-50.8		271	13.0
20	22	26,482	-48.8		259	13.6
15	19	28,385	-46.8		249	20.0
10	13	31,092	-44.8		259	18.5
7	7	33,484	-43.2			
5	6	35,721	-40.5			

BURRWOOD, LA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	3	18.2	91	109	1.9
1,000	30	140	19.0	81	139	4.1
950	30	575	17.0	71	154	8.4
900	30	1,040	14.6	57	156	8.4
850	30	1,523	13.4	41	197	5.8
800	30	2,031	10.8	39	230	5.8
750	30	2,563	7.9	36	250	6.4
700	30	3,133	4.9	28	273	8.5
650	30	3,728	1.1		280	10.5
600	30	4,372	- 2.9		278	11.1
550	30	5,049	- 7.8		274	13.4
500	30	5,791	-12.9		263	14.6
450	30	6,578	-18.3		264	19.0
400	30	7,456	-24.8		255	22.5
350	30	8,414	-31.7		259	23.3
300	30	9,486	-39.8		261	31.5
250	30	10,706	-49.2		258	36.1
200	30	12,141	-57.6		258	45.9
175	30	12,979	-59.9		259	45.9
150	30	13,939	-61.4		251	46.6
125	30	15,063	-64.1		259	43.7
100	30	16,417	-67.3		264	35.2
80	30	17,757	-68.2		258	24.1
60	29	19,494	-64.3		266	6.0
50	28	20,619	-60.3		273	.6
40	26	22,020	-56.4		65	2.3
30	25	23,865	-52.2		75	8.4
25	25	25,050	-50.0		76	10.3
20	22	26,520	-46.8		88	6.0
15	21	28,441	-43.6		62	7.2
10	9	31,169	-39.3			
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5						

CAPE HATTERAS, N. C. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	4	14.8	82	272	3.3
1,000	30	146	15.7	71	267	4.9
950	30	575	14.5	62	266	9.7
900	30	1,037	12.0	57	262	13.6
850	30	1,514	9.6	53	253	15.7
800	30	2,015	7.2	43	251	15.3
750	30	2,541	4.8	40	255	17.1
700	30	3,103	1.6	37	255	18.3
650	30	3,692	- 1.8		256	21.0
600	30	4,329	- 5.7	36	267	20.4
550	29	5,001	-10.1		269	23.1
500	29	5,737	-15.0		270	25.3
450	29	6,515	-20.5		272	27.2
400	29	7,387	-26.8		273	29.0
350	29	8,337	-33.9		271	31.5
300	29	9,400	-41.9		275	34.8
250	29	10,611	-50.7		276	40.4
200	29	12,036	-59.2		275	45.9
175	29	12,870	-60.4		273	44.3
150	29	13,832	-60.0		269	43.5
125	29	14,968	-61.2		269	39.6
100	28	16,350	-62.5		273	31.5
80	28	17,728	-62.4		275	22.7
60	28	19,511	-60.2		283	10.9
50	26	20,656	-57.5		286	6.0
40	24	22,080	-54.0		319	3.7
30	23	23,944	-50.6		10	4.1
25	22	25,140	-48.9		27	5.6
20	20	26,608	-47.2		47	5.1
15	18	28,523	-44.8		65	2.7
10	15	31,282	-40.7		258	11.1
7	14	33,741	-38.1			
5	7	36,108	-35.2			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

CARIBOU, ME. (991 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	191	- 0.9	87	249	2.7
1,000	30	115				
950	30	524	- 1.3	72	257	4.7
900	30	956	- 2.1	66	272	7.4
850	30	1,410	- 3.0	60	276	12.0
800	30	1,889	- 4.5	57	281	16.3
750	30	2,394	- 6.8	58	283	19.4
700	30	2,932	- 8.7	52	278	22.2
650	30	3,504	-11.2	44	275	28.4
600	30	4,115	-14.4		277	29.5
550	30	4,767	-18.0		279	35.0
500	30	5,478	-22.5		279	40.0
450	30	6,235	-27.7		276	42.6
400	30	7,082	-33.8		278	45.5
350	30	8,006	-39.9		277	50.5
300	30	9,045	-46.2		275	54.4
250	30	10,242	-51.2		277	60.2
200	28	11,683	-54.2		273	55.4
175	28	12,540	-53.6		272	46.0
150	28	13,533	-52.7		272	41.0
125	28	14,710	-53.1		272	35.2
100	28	16,145	-54.3		274	29.3
80	28	17,575	-54.4		277	21.0
60	27	19,419	-53.9		278	17.3
50	26	20,593	-53.2		284	11.5
40	25	22,038	-52.2		279	13.0
30	24	23,900	-51.4		272	10.1
25	23	25,083	-50.6		270	9.7
20	21	26,533	-49.7		268	13.8
15	18	28,454	-47.2		266	15.2
10	12	31,140	-44.5		278	19.6
7	6	33,435	-45.1			
5	6	35,694	-42.4			

CHARLESTON, S. C. (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	13	13.9	85	302	0.8
1,000	30	164	16.2	75	248	3.3
950	30	599	15.4	60	246	7.2
900	30	1,058	13.2	55	264	6.8
850	30	1,537	10.5	56	271	8.0
800	30	2,040	8.1	49	263	9.5
750	30	2,571	5.5	41	252	11.7
700	30	3,133	2.8		252	13.0
650	30	3,729	- .5		257	15.2
600	30	4,366	- 4.2		261	16.1
550	30	5,043	- 8.7		264	16.9
500	30	5,779	-13.8		261	19.8
450	30	6,564	-19.7		260	22.0
400	30	7,437	-26.1		264	24.5
350	30	8,390	-33.1		266	26.6
300	30	9,456	-41.3		269	29.5
250	30	10,670	-50.4		272	33.4
200	30	12,097	-58.7		263	45.7
175	30	12,933	-60.2		266	47.2
150	30	13,894	-60.2		265	42.9
125	30	15,026	-62.4		269	39.4
100	30	16,396	-64.8		265	36.3
80	30	17,759	-64.5		269	22.3
60	29	19,527	-62.0		275	9.9
50	29	20,665	-58.3		287	4.9
40	28	22,082	-54.4		312	2.5
30	27	23,939	-51.0		70	1.9
25	27	25,131	-49.1		86	5.4
20	27	26,603	-46.7		112	6.6
15	24	28,522	-44.1		173	2.7
10	17	31,285	-39.1		258	7.8
7	13	33,764	-36.3		266	18.3
5	9	36,066	-35.1			

COLD BAY, ALASKA (1004 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	27	- 4.4	81	347	5.8
1,000	29	59			343	9.9
950	29	460	- 7.0	79	344	7.0
900	29	881	- 9.6	77	341	8.0
850	29	1,322	-11.0	63	316	9.1
800	29	1,787	-12.0	52	306	7.4
750	29	2,278	-14.2	46	308	6.8
700	29	2,801	-16.8	42	290	5.4
650	29	3,350	-20.1	46	280	4.1
600	29	3,944	-23.7	46	246	7.6
550	29	4,569	-27.9	46	248	6.8
500	29	5,254	-32.4	45	229	13.6
450	29	5,982	-37.2		228	13.4
400	29	6,798	-42.1		235	16.9
350	29	7,691	-46.9		261	16.1
300	29	8,705	-49.7		261	19.2
250	28	9,903	-48.1		265	17.5
200	28	11,382	-46.1		262	20.2
175	27	12,269	-45.9		263	17.3
150	27	13,295	-46.3		258	16.7
125	26	14,512	-46.3		253	15.7
100	25	15,989	-47.4		248	10.3
80	23	17,465	-47.7		229	4.9
60	22	19,366	-47.9		160	3.3
50	22	20,570	-48.2		97	7.6
40	21	22,039	-48.9		93	10.7
30	20	23,929	-49.3		83	17.7
25	20	25,126	-49.4		87	22.0
20	20	26,592	-49.3		84	24.5
15	12	28,495	-48.4		83	32.6
10						
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COLUMBIA, MO. (985 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	238	9.4	74	190	3.5
1,000	30	107				
950	30	531	10.8	60	213	11.3
900	30	985	9.0	60	247	17.3
850	30	1,457	7.3	54	260	19.0
800	30	1,954	5.2	47	263	20.8
750	30	2,477	2.5	42	266	19.8
700	30	3,034	- .7	36	270	21.8
650	30	3,615	- 3.9	37	269	25.5
600	30	4,250	- 8.2	38	263	30.5
550	30	4,911	-12.6	33	264	31.3
500	30	5,641	-17.5		263	32.6
450	30	6,411	-23.0		261	34.2
400	30	7,275	-29.2		259	38.3
350	30	8,216	-36.1		255	40.0
300	30	9,268	-43.9		249	41.8
250	30	10,469	-52.9		254	45.3
200	30	11,886	-59.1		257	49.2
175	30	12,722	-59.3		260	43.9
150	30	13,692	-57.7		263	42.9
125	30	14,843	-58.0		265	33.2
100	30	16,245	-59.5		265	25.6
80	30	17,639	-59.9		266	17.9
60	30	19,439	-58.6		272	10.9
50	30	20,587	-57.3		281	7.6
40	30	22,002	-55.9		292	6.0
30	29	23,845	-53.6		293	5.8
25	28	25,019	-52.0		286	8.2
20	25	26,465	-49.5		261	11.5
15	22	28,361	-46.8		258	19.6
10	11	31,079	-41.9			
7						
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DAYTON, OHIO (981 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	297	7.9	70	231	2.9
1,000	30	139				
950	30	564	9.5	60	244	9.3
900	30	1,012	7.6	53	259	17.5
850	30	1,481	5.6	50	260	19.8
800	30	1,975	3.3	44	258	23.7
750	30	2,495	.6	37	257	20.8
700	30	3,047	- 2.5	38	258	23.1
650	30	3,631	- 6.0	38	257	25.8
600	30	4,254	- 9.8	43	259	29.3
550	30	4,917	-14.1	45	260	31.7
500	30	5,638	-18.9	42	255	34.0
450	30	6,409	-24.4	44	260	36.7
400	30	7,264	-30.1	39	263	41.4
350	29	8,209	-36.4		259	46.2
300	29	9,262	-43.8		258	49.2
250	29	10,465	-51.8		259	54.6
200	29	11,888	-58.2		264	54.0
175	29	12,726	-58.8		264	48.6
150	29	13,697	-57.7		266	38.9
125	29	14,848	-57.9		264	32.3
100	29	16,251	-59.2		265	27.6
80	29	17,650	-59.3		269	18.8
60	29	19,457	-58.0		274	11.1
50	29	20,610	-56.7		275	8.2
40	29	22,030	-55.2		281	7.4
30	29	23,880	-52.4		283	7.2
25	28	25,061	-50.9		255	10.5
20	26	26,522	-48.7		244	18.8
15	23	28,418	-46.4		237	22.0
10	15	31,109	-43.6		249	34.8
7	8	33,509	-40.0			
5						

DENVER, COLO. (835 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,611	2.4	67	173	1.4
1,000	30	128				
950	30	556				
900	30	999				
850	30	1,468				
800	30	1,965	6.3	45	283	3.7
750	30	2,491	3.5	43	304	7.4
700	30	3,049	- .3	44	302	11.1
650	30	3,633	- 4.9	47	301	16.1
600	30	4,262	- 9.4	45	295	21.0
550	30	4,927	-13.6	37	290	22.3
500	30	5,649	-18.6	32	290	23.5
450	30	6,420	-24.5		287	23.9
400	30	7,273	-31.1		279	23.5
350	30	8,205	-38.5		282	24.1
300	30	9,248	-46.4		282	26.0
250	30	10,437	-54.1		280	29.7
200	30	11,851	-59.3		274	34.0
175	30	12,687	-59.1		276	36.9
150	29	13,659	-56.8		277	33.6
125	29	14,813	-57.6		279	28.8
100	29	16,218	-59.4		273	23.1
80	28	17,611	-59.6		276	15.9
60	28	19,409	-59.0		262	9.9
50	28	20,556	-57.9		316	4.3
40	28	21,965	-57.3		330	3.7
30	28	23,790	-55.9		345	3.1
25	28	24,953	-55.0		331	4.1
20	27	26,383	-53.6		305	6.0
15	26	28,246	-51.0		298	9.1
10	24	30,902	-46.9		283	13.0
7	18	33,268	-43.2		290	17.7
5	9	35,491	-41.9			

DODGE CITY, KANS. (922 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	792	8.1	72	256	3.9
1,000	29	113				
950	29	543				
900	29	991	10.6	59	237	4.5
850	29	1,468	10.4	46	268	9.9
800	29	1,970	8.0	41	269	11.7
750	29	2,499	5.0	39	278	12.8
700	29	3,059	1.0	38	263	15.2
650	29	3,649	- 3.0	36	274	17.3
600	29	4,281	- 7.4	35	272	18.5
550	29	4,946	-12.2	34	275	22.0
500	29	5,675	-17.3	33	262	28.2
450	29	6,444	-23.3		256	31.9
400	29	7,307	-30.2		254	36.5
350	29	8,243	-37.3		259	37.1
300	29	9,289	-45.5		258	42.7
250	28	10,493	-53.8		255	52.7
200	28	11,906	-58.5		250	51.7
175	28	12,745	-58.1		252	48.4
150	28	13,718	-57.8		254	42.7
125	27	14,866	-58.7		254	34.8
100	27	16,264	-60.5		256	27.4
80	27	17,653	-60.9		248	21.0
60	27	19,448	-58.5		237	10.1
50	26	20,596	-57.3		239	5.8
40	25	22,012	-55.7		217	2.5
30	25	23,855	-53.5		223	2.1
25	25	25,031	-52.2		219	5.4
20	24	26,480	-51.1		242	4.7
15	21	28,358	-48.9		260	18.5
10	17	31,047	-44.4		266	26.0
7	5	33,489	-40.9			
5						

EL PASO, TEX. (880 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,197	13.3	28	236	1.0
1,000	30	100				
950	30	539				
900	30	1,010				
850	30	1,490	15.3	23	268	4.5
800	30	2,000	12.5	22	272	10.5
750	30	2,531	8.6	23	268	13.2
700	30	3,104	4.2	25	271	15.5
650	30	3,695	- .2	26	267	17.1
600	30	4,336	- 4.9	26	264	17.3
550	30	5,006	- 9.9		267	18.1
500	30	5,743	-14.8		273	20.6
450	30	6,522	-20.5		276	19.2
400	30	7,393	-27.1		272	20.6
350	30	8,341	-34.6		275	20.6
300	29	9,402	-42.8		289	23.7
250	29	10,610	-51.4		292	32.4
200	29	12,035	-58.6		290	37.5
175	29	12,871	-60.0		289	38.9
150	28	13,833	-60.8		287	40.2
125	28	14,962	-63.2		283	36.9
100	28	16,328	-65.4		277	25.8
80	28	17,681	-66.1		297	13.8
60	28	19,438	-62.0		57	2.3
50	27	20,573	-59.2		356	8.5
40	27	21,979	-56.6		46	6.8
30	26	23,818	-53.3		16	4.7
25	25	25,000	-50.8		285	5.4
20	22	26,459	-47.7		268	16.3
15	19	28,373	-44.1		271	8.9
10	5	31,135	-40.5			
7						
5						

ELY, NEV. (807 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,908	0.4	55	196	6.8
1,000	30	146				
950	30	570				
900	30	1,016				
850	30	1,486				
800	30	1,979			198	3.7
750	30	2,503	2.7	45	203	4.9
700	30	3,058	- 1.0	43	253	7.4
650	30	3,642	- 4.9	43	260	12.2
600	30	4,271	- 8.9	42	260	15.2
550	30	4,935	-13.6	42	260	17.9
500	30	5,658	-18.5	36	259	22.2
450	30	6,430	-24.2		254	25.1
400	30	7,284	-30.7		256	27.2
350	30	8,219	-38.2		259	25.8
300	30	9,263	-46.2		264	25.8
250	30	10,456	-53.5		266	32.8
200	30	11,873	-58.6		272	35.6
175	30	12,712	-57.8		275	36.5
150	30	13,683	-58.1		275	29.5
125	30	14,831	-58.7		274	24.9
100	29	16,231	-60.3		274	17.9
80	29	17,618	-60.6		269	9.7
60	28	19,415	-59.0		276	3.3
50	28	20,560	-58.1		46	3.7
40	26	21,967	-57.7		32	2.3
30	24	23,788	-57.0		43	4.9
25	21	24,945	-56.6		324	3.5
20	21	26,364	-54.8		341	5.2
15	15	28,205	-52.3		352	5.4
10	7	30,823	-47.8			
7						
5						

FAIRBANKS, ALASKA (992 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	135	- 6.4	72	359	4.5
1,000	30	71				
950	30	475	- 5.5	57	53	3.7
900	30	897	- 7.1	61	136	3.1
850	30	1,342	- 8.7	63	181	4.5
800	30	1,810	-10.7	63	192	8.7
750	30	2,303	-13.4	63	200	14.2
700	30	2,826	-16.4	59	201	14.6
650	30	3,378	-20.1	55	204	15.7
600	30	3,969	-23.8	55	206	18.5
550	30	4,597	-27.7	51	207	20.8
500	30	5,279	-32.2	50	207	22.9
450	30	6,011	-36.9	49	205	23.9
400	30	6,822	-42.2		203	25.1
350	30	7,714	-47.8		205	26.0
300	30	8,721	-51.6		206	25.8
250	29	9,897	-51.3		214	23.3
200	28	11,360	-47.7		211	16.9
175	28	12,245	-46.1		211	15.7
150	27	13,263	-45.2		216	10.3
125	27	14,481	-45.4		213	12.2
100	27	15,970	-45.7		205	9.1
80	27	17,456	-45.7		186	5.2
60	26	19,378	-45.2		139	4.5
50	25	20,593	-45.3		123	5.8
40	25	22,080	-45.3		108	9.7
30	25	23,997	-45.4		88	14.4
25	22	25,224	-44.6		85	19.0
20	19	26,729	-43.9		84	24.5
15	14	28,652	-43.8		94	30.3
10	5	31,310	-42.7			
7						
5						

FLINT, MICH. (986 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	234	5.9	82	218	4.3
1,000	30	119				
950	30	540	6.8	66	240	10.9
900	30	986	5.6	62	260	16.3
850	30	1,452	3.5	61	262	18.3
800	30	1,942	1.1	60	266	21.4
750	30	2,454	- 1.3	54	263	22.9
700	30	3,007	- 4.1	50	266	24.3
650	30	3,583	- 7.4	49	266	26.8
600	30	4,208	-11.1	52	268	29.9
550	30	4,864	-15.0	51	267	31.1
500	30	5,586	-19.9	49	265	38.3
450	30	6,352	-25.3	42	265	36.1
400	30	7,205	-31.6	40	267	39.6
350	30	8,137	-37.9		277	45.1
300	30	9,184	-44.9		271	46.0
250	30	10,383	-52.0		269	50.3
200	30	11,809	-57.4		270	53.4
175	30	12,655	-56.0		274	45.9
150	29	13,636	-54.4		270	38.9
125	29	14,801	-55.4		270	31.7
100	29	16,221	-56.7		270	26.8
80	29	17,634	-57.1		273	20.0
60	29	19,457	-56.4		279	13.2
50	29	20,616	-55.6		283	9.7
40	28	22,043	-54.4		285	8.2
30	28	23,895	-52.5		276	10.5
25	26	25,070	-51.0		267	10.9
20	26	26,529	-48.7		255	14.2
15	21	28,415	-46.3		245	20.2
10	9	31,120	-40.8			
7						
5						

FORT WORTH, TEX. (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	180	15.2	72	184	2.9
1,000	30	125				
950	30	563	15.4	61	192	8.0
900	30	1,019	13.7	60	217	11.9
850	30	1,500	12.2	48	235	10.7
800	30	2,006	10.2	41	249	9.1
750	30	2,539	7.6	35	259	10.7
700	30	3,105	3.6	36	267	13.2
650	30	3,698	- .6	32	272	15.9
600	30	4,337	- 5.2	37	272	17.5
550	30	5,010	-10.1	38	271	17.5
500	30	5,742	-15.2		264	22.0
450	30	6,524	-20.9		259	25.5
400	30	7,390	-27.3		258	29.3
350	30	8,337	-34.6		261	35.0
300	30	9,396	-42.9		261	37.5
250	30	10,601	-51.8		264	40.0
200	30	12,022	-58.8		264	44.9
175	30	12,858	-59.8		266	46.8
150	30	13,821	-59.7		268	42.9
125	30	14,959	-61.4		267	39.1
100	29	16,334	-64.0		265	29.0
80	29	17,697	-64.6		266	20.6
60	29	19,465	-61.0		276	6.4
50	28	20,603	-59.2		235	2.7
40	28	22,013	-56.2		256	2.5
30	28	23,853	-53.6		288	3.1
25	28	25,030	-51.4		248	2.1
20	28	26,490	-48.6		240	6.2
15	27	28,397	-45.3		250	10.5
10	26	31,137	-40.5		259	18.8
7	18	33,606	-37.2		261	30.1
5	7	35,942	-36.3			

GLASGOW, MONT. (933 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	696	1.2	71	29	0.8
1,000	30	131				
950	30	545				
900	30	986	3.2	53	305	3.9
850	30	1,449	1.7	49	292	9.3
800	30	1,935	- 1.0	50	294	12.4
750	30	2,440	- 4.3	53	295	14.6
700	30	2,988	- 7.4	54	296	17.3
650	30	3,554	-11.0	51	290	19.0
600	30	4,173	-14.8	49	285	22.0
550	30	4,820	-19.0	46	286	26.0
500	30	5,530	-23.8	44	294	31.1
450	30	6,281	-28.9	40	296	36.3
400	30	7,124	-35.3		295	39.6
350	30	8,042	-41.9		285	38.7
300	30	9,071	-48.8		289	45.3
250	30	10,251	-55.1		286	45.9
200	29	11,668	-55.2		285	38.3
175	29	12,523	-53.3		280	30.5
150	29	13,519	-53.0		285	23.7
125	29	14,694	-53.3		287	22.7
100	29	16,127	-54.6		289	17.5
80	29	17,554	-54.5		297	11.9
60	29	19,391	-55.0		313	7.8
50	29	20,556	-54.7		359	4.7
40	28	21,986	-54.2		30	8.0
30	28	23,832	-53.7		55	8.7
25	28	25,005	-53.4		48	10.3
20	26	26,443	-52.5		50	12.4
15	25	28,303	-50.5		67	13.8
10	24	30,973	-46.3		65	15.9
7	16	33,351	-43.1		61	12.2
5	11	35,628	-41.1			

GRAND JUNCTION, COLO. (851 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,474	6.9	44	120	5.6
1,000	30	121				
950	30	550				
900	30	1,006				
850	30	1,481			102	6.0
800	30	1,981	7.3	35	161	5.2
750	30	2,506	3.7	38	229	4.7
700	30	3,064	- .6	43	259	8.2
650	30	3,648	- 5.0	47	262	12.4
600	30	4,276	- 9.1	44	269	16.7
550	30	4,937	-13.8	41	269	19.6
500	30	5,661	-19.1	35	273	21.8
450	30	6,428	-24.7		271	24.7
400	30	7,283	-31.3		280	25.6
350	30	8,215	-38.3		273	28.8
300	30	9,256	-46.5		282	30.5
250	30	10,446	-53.5		278	32.4
200	30	11,861	-58.8		275	35.8
175	29	12,692	-58.2		275	38.1
150	29	13,667	-57.1		276	34.2
125	28	14,817	-58.6		269	30.3
100	28	16,214	-60.5		274	22.2
80	27	17,604	-60.4		265	12.4
60	26	19,401	-59.2		259	6.8
50	26	20,543	-58.4		275	2.9
40	26	21,950	-57.3		321	3.3
30	24	23,786	-55.7		293	.8
25	24	24,950	-54.6		306	2.9
20	23	26,385	-53.1		285	5.6
15	21	28,254	-50.2		276	9.1
10	17	30,946	-45.1		267	20.6
7	9	33,379	-41.2			
5						

GREAT FALLS, MONT. (886 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	1,123	2.8	61	238	7.0
1,000	29	127				
950	29	550				
900	29	994				
850	29	1,456	3.4	50	249	15.2
800	29	1,945	.0	53	260	12.0
750	29	2,453	- 3.4	57	274	13.6
700	29	3,001	- 6.9	58	281	17.7
650	29	3,571	-10.1	52	279	18.8
600	29	4,190	-13.5	48	275	20.6
550	29	4,843	-17.7	45	274	28.0
500	29	5,554	-22.8	43	278	27.0
450	29	6,311	-28.5	42	270	27.6
400	29	7,154	-34.6	44	270	32.4
350	29	8,073	-41.6		270	31.3
300	29	9,102	-48.8		272	36.3
250	29	10,284	-54.5		275	38.1
200	29	11,704	-56.3		275	30.7
175	28	12,555	-53.6		275	28.4
150	27	13,544	-53.0		277	26.8
125	27	14,718	-53.6		277	20.4
100	25	16,142	-54.5		276	16.1
80	24	17,566	-55.4		288	11.3
60	24	19,401	-55.1		297	7.2
50	24	20,566	-54.8		329	6.2
40	24	21,993	-54.7		22	5.8
30	24	23,834	-54.3		39	7.0
25	23	25,010	-53.4		40	8.2
20	22	26,450	-52.4		46	11.7
15	21	28,318	-50.4		58	15.3
10	16	31,011	-46.3		34	10.7
7	7	33,340	-43.2			
5						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

APRIL 1960

GREEN BAY, WIS.
(987 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	210	3.2	89	296	2.5
1,000	30	100				
950	30	519	4.2	68	286	6.8
900	30	958	3.0	64	274	10.9
850	30	1,420	1.4	63	276	15.0
800	30	1,907	- .3	59	272	18.3
750	30	2,421	- 2.7	54	267	20.4
700	30	2,966	- 5.2	45	262	22.9
650	30	3,538	- 8.4	42	265	25.3
600	30	4,162	-12.0	44	266	32.1
550	30	4,816	-16.4	41	269	32.1
500	30	5,533	-21.3	41	263	35.0
450	30	6,296	-26.6	41	265	36.5
400	30	7,143	-32.8	40	262	39.2
350	30	8,070	-39.6		261	44.3
300	30	9,109	-46.3		258	51.3
250	30	10,303	-52.7		259	54.8
200	30	11,728	-56.3		263	51.7
175	30	12,578	-55.2		265	44.3
150	30	13,565	-54.3		268	36.1
125	30	14,733	-54.7		268	29.9
100	30	16,158	-55.8		271	25.6
80	30	17,574	-56.8		278	19.6
60	30	19,398	-56.0		284	11.5
50	30	20,558	-55.5		297	8.7
40	29	21,981	-54.9		323	9.3
30	28	23,815	-54.4		314	9.1
25	28	24,985	-53.2		306	8.9
20	28	26,428	-51.3		275	8.4
15	25	28,296	-48.7		262	9.7
10	22	30,989	-44.8		272	14.4
7	18	33,397	-40.7		265	19.4
5	6	35 635	-39.0			

GREENSBORO, N. C.
(987 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	273	10.1	82	271	4.1
1,000	29	158				
950	29	590	12.8	62	282	8.7
900	29	1,042	11.2	56	285	11.7
850	29	1,517	8.3	57	286	13.8
800	29	2,016	5.6	56	277	14.2
750	29	2,543	3.1	48	270	15.7
700	29	3,099	.6	40	262	16.3
650	29	3,687	- 2.5		253	17.7
600	29	4,322	- 6.2		253	19.2
550	29	4,989	-10.3		253	20.6
500	29	5,725	-15.4		257	21.2
450	29	6,506	-21.0		261	22.0
400	29	7,372	-27.4		268	22.9
350	29	8,319	-34.5		270	26.0
300	29	9,378	-42.8		271	26.6
250	28	10,586	-51.8		282	27.8
200	28	12,004	-59.2		277	32.4
175	28	12,837	-60.8		281	35.2
150	28	13,797	-60.1		273	32.1
125	28	14,934	-60.8		268	29.9
100	27	16,315	-62.4		276	28.6
80	26	17,692	-62.2		287	19.0
60	26	19,477	-60.4		304	5.8
50	26	20,618	-58.3		319	4.1
40	25	22,032	-55.4		43	2.3
30	24	23,875	-52.9		55	7.2
25	24	25,056	-51.2		72	10.3
20	24	26,513	-49.4		92	9.1
15	22	28,404	-47.3		204	5.4
10	14	31,097	-43.9			

HILO, HAWAII
(1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	11	19.8	90	256	3.1
1,000	30	155	20.7	81	302	1.2
950	30	597	17.9	84	60	6.4
900	30	1,060	15.0	87	68	8.4
850	30	1,542	12.0	89	66	7.0
800	30	2,049	9.8	81	73	4.3
750	30	2,588	7.4	65	65	3.5
700	30	3,151	5.4	44	70	3.3
650	30	3,749	2.5	29	67	2.7
600	30	4,397	- 1.3		33	1.4
550	30	5,083	- 5.5		320	2.9
500	30	5,828	-10.5		306	5.8
450	30	6,624	-15.7		298	9.5
400	30	7,510	-22.3		287	12.8
350	30	8,477	-29.4		287	18.5
300	30	9,560	-37.5		276	29.9
250	30	10,793	-46.9		276	41.8
200	30	12,239	-56.8		282	38.5
175	30	13,077	-61.0		286	37.9
150	30	14,025	-65.4		285	32.4
125	28	15,121	-69.5		278	28.6
100	26	16,440	-73.0		276	22.0
80	25	17,750	-71.3		262	14.8
60	25	19,471	-67.0		261	7.0
50	24	20,576	-65.2		92	3.9
40	24	21,954	-59.7		83	9.9
30	18	23,781	-54.6		85	16.5
25	17	24,957	-52.6		77	16.7
20	15	26,406	-50.5		85	21.4
15	10	28,277	-48.2			

INTERNAT. FALLS, MINN.
(968 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	360	- 1.0	74	334	1.6
1,000	30	100				
950	30	514	- .2	69	5	2.1
900	30	943	- .9	63	293	3.7
850	30	1,398	- 2.3	60	292	8.5
800	30	1,877	- 4.0	56	291	11.7
750	30	2,385	- 6.3	56	290	15.7
700	30	2,923	- 8.6	54	291	17.7
650	30	3,493	-11.6	48	291	21.2
600	30	4,104	-15.0	44	287	24.9
550	30	4,750	-19.2	46	284	28.2
500	30	5,461	-23.6		287	30.7
450	30	6,215	-28.7		282	34.0
400	30	7,058	-34.7		278	39.1
350	30	7,978	-41.3		273	39.8
300	30	9,010	-47.9		272	46.2
250	30	10,198	-52.5		270	47.8
200	30	11,638	-52.7		271	42.4
175	30	12,502	-51.8		276	37.9
150	30	13,504	-51.3		278	32.3
125	30	14,686	-52.3		278	24.7
100	30	16,127	-53.2		279	21.8
80	28	17,560	-53.7		289	17.5
60	28	19,408	-53.8		298	13.2
50	28	20,579	-53.8		309	9.5
40	27	22,020	-53.1		334	6.6
30	26	23,874	-52.9		2	7.6
25	25	25,049	-52.6		18	6.6
20	24	26,493	-51.8		32	6.0
15	18	28,388	-49.6		338	2.9
10	9	31,018	-45.8			

JACKSON, MISS.
(1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	101	13.5	83	122	1.2
1,000	30	139			145	2.9
950	30	572	14.8	63	205	6.8
900	30	1,031	13.4	52	222	8.0
850	30	1,511	11.4	54	241	10.3
800	30	2,015	9.1	46	251	12.4
750	30	2,546	6.4	41	263	14.6
700	30	3,111	3.2	36	267	14.8
650	30	3,705	- .6	34	271	17.3
600	30	4,341	- 4.6		272	18.5
550	30	5,016	- 9.4		268	21.2
500	30	5,750	-14.4		266	22.9
450	30	6,535	-20.1		261	25.8
400	30	7,402	-26.4		257	28.4
350	30	8,355	-33.2		255	30.5
300	30	9,420	-41.3		258	32.8
250	30	10,634	-50.8		256	37.5
200	30	12,056	-59.9		256	40.2
175	30	12,889	-60.3		256	43.5
150	30	13,852	-60.1		259	46.6
125	30	14,987	-62.0		260	41.4
100	30	16,361	-64.2		265	32.1
80	30	17,721	-64.9		264	21.0
60	29	19,490	-61.7		271	4.1
50	29	20,628	-58.0		217	1.7
40	29	22,044	-55.0		30	2.1
30	27	23,891	-52.4		82	2.5
25	27	25,074	-50.3		87	4.7
20	23	26,550	-47.2		110	5.1
15	21	28,469	-43.6		189	3.1
10	8	31,281	-39.2			

JACKSONVILLE, FLA.
(1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	15.8	93		0.0
1,000	30	160	17.7	80	180	2.1
950	30	596	16.1	72	212	5.1
900	30	1,057	13.8	65	219	4.5
850	30	1,537	11.9	52	236	5.6
800	30	2,042	9.2	48	240	6.0
750	30	2,571	6.3	44	252	6.4
700	30	3,138	3.4	38	255	8.0
650	30	3,729	.3		269	10.3
600	30	4,373	- 3.3		264	12.0
550	30	5,046	- 7.9		262	14.2
500	30	5,789	-13.3		266	16.7
450	30	6,574	-19.1		266	19.8
400	30	7,449	-25.6		267	23.3
350	30	8,403	-32.9		263	25.3
300	30	9,470	-41.1		266	29.5
250	30	10,686	-50.0		265	41.2
200	30	12,115	-58.4		268	49.7
175	29	12,951	-59.8		264	53.4
150	29	13,913	-60.7		264	53.8
125	29	15,042	-63.6		266	46.6
100	29	16,400	-67.0		266	38.9
80	28	17,744	-66.8		266	29.5
60	28	19,493	-63.5		269	8.4
50	28	20,621	-59.8		40	3.7
40	28	22,029	-55.9		75	8.5
30	27	23,868	-53.0		86	9.7
25	26	25,049	-50.2		86	14.2
20	24	26,516	-47.2		94	11.1
15	17	28,426	-43.5		107	6.8
10	6	31,201	-37.8			

JOHNSTON IS., PACIFIC AREA
(1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	3	24.6	78	66	15.7
1,000	30	136	23.7	77	69	18.1
950	30	579	20.3	80	76	21.2
900	30	1,048	17.0	80	81	21.0
850	30	1,534	14.1	75	86	17.5
800	30	2,045	12.2	59	90	13.6
750	30	2,583	10.1	40	91	10.5
700	30	3,156	7.7		87	8.7
650	30	3,759	4.6		82	7.8
600	30	4,412	1.0		62	6.0
550	30	5,097	- 3.1		53	4.5
500	30	5,855	- 7.7		337	3.3
450	30	6,661	-13.2		315	5.8
400	30	7,556	-19.0		286	13.8
350	30	8,538	-25.8		279	24.5
300	30	9,637	-33.9		272	35.4
250	30	10,891	-43.0		269	51.5
200	30	12,362	-54.0		271	67.4
175	28	13,211	-60.2		272	73.8
150	27	14,157	-66.8		276	65.7
125	27	15,244	-72.4		277	48.0
100	24	16,540	-76.2		279	26.0
80	20	17,828	-76.0		283	14.6
60	19	19,515	-68.5		245	2.5
50	19	20,617	-65.3		94	3.5
40	17	21,988	-61.3		81	9.1
30	17	23,792	-57.0		87	13.2
25	15	24,947	-54.4		81	15.9
20	15	26,387	-51.5		83	18.3
15	13	28,268	-49.1		80	25.1
10	6	30,936	-45.4			

KING SALMON, ALASKA
(1004 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	15	- 6.3	79	22	1.0
1,000	30	44			343	2.9
950	30	445	- 6.4	70	5	2.7
900	30	867	- 8.0	68	56	1.4
850	30	1,311	- 9.1	66	168	4.3
800	30	1,778	-11.2	62	166	6.0
750	30	2,271	-13.6	59	171	8.2
700	30	2,794	-16.6	59	181	8.0
650	30	3,343	-19.9	54	193	8.4
600	30	3,938	-23.5	50	193	11.1
550	30	4,566	-27.5	46	192	11.3
500	30	5,251	-31.7	44	196	14.0
450	30	5,984	-36.6		196	14.0
400	30	6,798	-41.6		195	16.9
350	30	7,693	-46.7		198	19.4
300	30	8,707	-49.9		195	20.8
250	30	9,901	-48.4		200	17.7
200	30	11,379	-46.0		214	15.2
175	30	12,269	-45.4		201	11.7
150	30	13,297	-45.5		200	10.3
125	29	14,515	-45.5		201	10.9
100	27	15,993	-46.2		188	10.3
80	23	17,468	-46.7		167	6.8
60	17	19,370	-46.7		132	7.4
50	16	20,570	-47.1		120	9.7
40	15	22,047	-47.5		105	13.4
30	10	23,958	-47.0		99	16.7
25	8	25,141	-47.2			
20	5	26,603	-47.5			
15	5	28,503	-47.7			

KOTZEBUE, ALASKA
(1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	-17.8	75	9	1.4
1,000	30	106	-14.4	64	36	2.3
950	30	501	-12.9	58	63	4.9
900	30	909	-13.6	57	101	4.9
850	30	1,343	-14.6	54	104	6.0
800	30	1,801	-15.9	53	106	6.4
750	30	2,283	-18.0	51	108	5.2
700	30	2,800	-20.4	49	109	4.9
650	30	3,339	-23.3	47	133	7.4
600	30	3,929	-26.4	46	137	7.6
550	30	4,547	-30.2	44	139	7.6
500	30	5,225	-34.7	41	141	9.1
450	30	5,951	-39.3		154	10.5
400	30	6,755	-44.0		154	12.0
350	30	7,642	-48.3		162	12.4
300	30	8,652	-50.2		171	13.4
250	29	9,847	-48.2		176	13.4
200	29	11,327	-45.5		182	11.5
175	29	12,219	-44.8		184	12.4
150	29	13,252	-44.1		180	11.3
125	29	14,476	-43.7		184	12.6
100	29	15,976	-43.6		167	11.1
80	29	17,475	-43.8		155	10.1
60	26	19,401	-44.0		124	9.5
50	25	20,624	-44.0		122	10.3
40	22	22,123	-43.9		119	12.6
30	20	24,053	-44.2		109	15.3
25	19	25,274	-44.1		101	16.5
20	18	26,776	-43.7		103	19.6
15	13	28,713	-43.2		92	33.0
10	7	31,381	-44.2			

LAKE CHARLES, LA.
(1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	15.7	89	101	2.1
1,000	30	140	17.3	76	133	5.2
950	30	576	16.3	63	153	9.9
900	30	1,038	14.9	54	168	9.3
850	30	1,521	12.8	47	196	9.5
800	30	2,028	10.6	34	216	8.4
750	30	2,561	8.0	32	230	8.7
700	30	3,131	4.6	29	254	11.3
650	30	3,728	.5	28	260	12.4
600	30	4,368	- 4.0	28	258	13.0
550	30	5,046	- 8.7		255	17.1
500	30	5,782	-13.9		250	18.1
450	30	6,568	-19.6		250	20.2
400	30	7,440	-26.1		257	19.4
350	30	8,393	-33.0		262	22.3
300	30	9,460	-41.3		271	26.0
250	30	10,673	-50.7		271	33.4
200	30	12,097	-58.9		267	43.1
175	29	12,932	-59.6		269	43.5
150	29	13,895	-60.5		268	43.1
125	29	15,024	-63.3		264	38.1
100	29	16,385	-66.5		261	32.6
80	28	17,734	-67.0		271	18.3
60	28	19,486	-62.4		250	4.3
50	28	20,620	-59.3		197	.6
40	28	22,031	-55.6		225	2.3
30	27	23,888	-51.9		81	9.7
25	26	25,077	-49.1		96	5.4
20	24	26,554	-45.8		70	3.9
15	19	28,495	-41.2		146	3.1
10	8	31,295	-36.8			

LANDER, WYO.
(826 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,696	2.4	59	250	2.3
1,000	30	120				
950	30	544				
900	30	990				
850	30	1,463				
800	30	1,956	3.8	45	292	3.3
750	30	2,474	.9	44	280	4.5
700	30	3,029	- 2.6	44	281	9.5
650	30	3,606	- 6.9	45	280	14.4
600	30	4,232	-11.3	42	277	19.8
550	30	4,888	-15.3	41	279	19.8
500	30	5,608	-19.9	36	281	21.6
450	30	6,374	-25.9		283	25.5
400	30	7,223	-32.4		284	28.2
350	30	8,151	-39.6		278	30.5
300	30	9,187	-47.4		278	37.1
250	30	10,373	-54.8		278	40.2
200	30	11,782	-59.2		276	42.6
175	30	12,621	-57.3		271	41.6
150	30	13,601	-55.6		279	37.1
125	30	14,761	-56.7		278	28.8
100	29	16,168	-57.9		277	20.8
80	29	17,573	-58.0		285	15.2
60	29	19,387	-57.2		297	5.2
50	29	20,539	-57.1		325	2.7
40	29	21,951	-56.7		345	4.1
30	27	23,784	-55.9		33	5.4
25	26	24,945	-55.6		38	8.5
20	23	26,371	-54.2		22	8.7
15	21	28,227	-51.8		348	8.9
10	14	30,893	-47.2			

LAS VEGAS, NEV.
(936 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	660	13.8	28	213	5.8
1,000	30	100				
950	30	538				
900	30	996	16.5	24	246	5.4
850	30	1,479	13.5	25	274	7.0
800	30	1,986	9.9	27	263	7.6
750	30	2,515	6.0	31	249	8.7
700	30	3,080	2.1	31	252	9.5
650	30	3,669	- 1.8	29	260	10.9
600	30	4,305	- 6.0		266	15.2
550	30	4,975	-10.8	28	272	19.0
500	30	5,706	-16.4		273	21.6
450	30	6,481	-22.5		272	24.5
400	30	7,343	-29.2		270	28.0
350	30	8,283	-36.2		273	33.2
300	30	9,337	-43.8		279	39.1
250	30	10,539	-52.2		280	44.7
200	30	11,960	-58.7		278	48.6
175	30	12,796	-59.7		275	46.6
150	30	13,763	-58.7		276	43.3
125	28	14,902	-60.5		277	32.6
100	27	16,286	-62.8		272	23.7
80	27	17,659	-62.6		272	16.1
60	27	19,441	-60.1		269	5.1
50	27	20,581	-58.7		290	2.1
40	27	21,986	-57.5		2	1.2
30	24	23,805	-56.3		26	1.4
25	23	24,966	-55.1		336	2.5
20	21	26,404	-53.1		313	1.4
15	16	28,266	-51.4		3	7.2

LIHUE, HAWAII
(1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	36	21.1	81	33	10.7
1,000	30	165	20.5	80	42	13.0
950	30	603	17.1	84	57	15.2
900	30	1,068	14.0	84	62	15.0
850	30	1,548	11.1	82	68	13.2
800	30	2,053	9.6	63	73	11.1
750	30	2,593	8.5	33	76	6.6
700	30	3,157	6.2	24	68	4.1
650	30	3,759	2.8		47	2.7
600	30	4,404	- 1.4		34	3.1
550	30	5,086	- 5.6		5	3.3
500	30	5,833	-10.3		339	6.0
450	30	6,630	-15.8		325	8.4
400	30	7,515	-22.5		318	10.9
350	30	8,481	-29.9		309	13.0
300	30	9,561	-38.5		298	17.5
250	30	10,789	-47.7		293	25.6
200	30	12,231	-57.3		285	35.9
175	29	13,069	-61.1		286	37.5
150	29	14,018	-64.5		284	35.2
125	29	15,122	-68.2		284	29.1
100	29	16,449	-71.6		277	19.8
80	27	17,764	-71.0		286	14.0
60	27	19,489	-65.9		236	2.7
50	27	20,601	-63.0		114	4.9
40	27	21,987	-58.7		97	7.0
30	27	23,810	-54.6		91	12.0
25	25	24,978	-52.5		94	14.4
20	25	26,428	-50.0		78	15.9
15	17	28,326	-46.2		86	18.3
10	5	31,067	-40.9			

LITTLE ROCK, ARK.
(1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	79	12.7	73	181	1.7
1,000	29	137	13.0	68	167	2.9
950	29	571	14.2	54	207	7.6
900	29	1,026	12.0	53	227	12.6
850	29	1,504	10.3	46	237	15.9
800	29	2,007	8.4	34	255	15.3
750	29	2,536	5.8	33	257	14.2
700	29	3,099	2.3	37	272	14.2
650	29	3,692	- 1.5	35	275	15.9
600	29	4,328	- 5.2	36	268	15.5
550	29	4,997	-10.2		270	17.9
500	29	5,733	-15.3		269	22.2
450	29	6,514	-21.0		269	24.1
400	29	7,382	-27.3		268	30.1
350	29	8,330	-34.7		274	23.9
300	29	9,388	-43.1		269	25.8
250	29	10,592	-52.3		259	28.6
200	29	12,008	-59.8		259	32.1
175	29	12,841	-60.1			
150	29	13,804	-59.4		250	36.3
125	29	14,945	-60.3		254	34.8
100	29	16,328	-62.7		251	25.5
80	28	17,700	-63.0		258	15.3
60	26	19,481	-60.0			
50	26	20,626	-57.4			
40	24	22,038	-55.4			
30	24	23,885	-52.5			
25	23	25,070	-50.7			
20	20	26,525	-47.8			
15	14	28,454	-43.6			
10	5	31,198	-39.4			

McGRATH, ALASKA
(996 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	103	-10.8	63	297	3.3
1,000	30	71			318	2.9
950	30	466	- 8.0	59	51	5.2
900	30	886	- 9.6	61	94	5.8
850	30	1,327	-11.0	63	125	5.1
800	30	1,792	-12.5	58	151	5.1
750	30	2,277	-15.0	55	161	10.9
700	30	2,801	-18.0	55	168	10.7
650	30	3,348	-21.2	54	177	13.2
600	30	3,938	-24.6	50	181	13.8
550	30	4,563	-28.5	45	178	13.2
500	30	5,244	-32.9	44	178	15.0
450	30	5,972	-37.5		174	16.9
400	30	6,783	-42.7		181	24.1
350	30	7,674	-47.4		189	24.3
300	29	8,684	-50.0		176	23.5
250	29	9,877	-48.9		198	16.7
200	29	11,354	-45.8		207	12.2
175	29	12,245	-44.8		200	10.5
150	29	13,278	-44.6		190	10.1
125	29	14,498	-44.6		203	9.5
100	29	15,991	-44.8		186	8.4
80	29	17,483	-44.9		177	5.8
60	29	19,406	-45.2		109	4.1
50	28	20,625	-44.9		112	6.6
40	28	22,117	-45.0		83	12.4
30	28	24,041	-45.1		80	17.3
25	28	25,259	-45.0			
20	21	26,768	-44.4			
15	12	28,741	-43.6			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

APRIL 1960

Standard pressure surface (mb)	MEDFORD, OREG. (971 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	401	6.0	87		0.0
1,000--	30	158				
950----	30	583	6.8	78	277	1.4
900----	30	1,025	5.4	71	209	2.5
850----	30	1,490	2.9	70	222	5.4
800----	30	1,979	.1	65	241	9.1
750----	30	2,490	-2.7	56	245	12.0
700----	30	3,038	-5.6	49	252	14.4
650----	30	3,612	-8.8	44	254	17.3
600----	30	4,232	-12.5	48	255	20.0
550----	30	4,886	-16.8	50	258	22.5
500----	30	5,601	-21.3	44	262	25.6
450----	30	6,362	-27.0	40	260	29.3
400----	30	7,209	-33.5	43	257	22.7
350----	30	8,133	-40.4		260	27.8
300----	30	9,168	-47.3		260	31.9
250----	30	10,359	-52.9		264	38.1
200----	30	11,784	-56.6		261	35.2
175----	30	12,631	-56.4		264	32.6
150----	30	13,612	-55.7		267	23.1
125----	29	14,776	-56.7		266	19.6
100----	29	16,188	-57.9		260	15.2
80-----	29	17,592	-58.5		262	7.2
60-----	28	19,404	-57.2		262	2.3
50-----	27	20,557	-57.0		98	2.1
40-----	27	21,971	-56.7		109	1.7
30-----	27	23,795	-56.8		85	4.9
25-----	26	24,952	-56.4		56	4.5
20-----	26	26,369	-56.0		67	5.4
15-----	24	28,205	-54.5		349	4.9
10-----	22	30,824	-51.6		297	9.9
7------	17	33,153	-48.5		273	16.1
5------	12	35,388	-46.3			

Standard pressure surface (mb)	MIAMI, FLA. (1017 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	4	20.7	81	89	2.9
1,000--	30	148	20.6	77	90	5.8
950----	30	586	17.9	74	110	8.7
900----	30	1,052	15.0	72	125	6.2
850----	30	1,535	13.0	57	130	4.3
800----	30	2,042	10.8	50	177	3.1
750----	30	2,576	8.3	48	192	3.1
700----	30	3,145	5.2	45	228	3.9
650----	30	3,739	1.9	37	252	3.9
600----	30	4,389	-1.7		257	8.5
550----	30	5,068	-5.8		262	12.4
500----	30	5,817	-10.7		263	15.9
450----	30	6,612	-16.1		269	22.3
400----	30	7,497	-22.7		266	26.4
350----	30	8,463	-29.6		265	33.6
300----	30	9,544	-37.9		264	40.6
250----	30	10,775	-47.1		263	51.1
200----	29	12,224	-55.9		265	58.5
175----	29	13,067	-59.2		261	58.7
150----	28	14,026	-62.8		262	54.8
125----	27	15,141	-66.4		264	49.9
100----	27	16,479	-70.4		268	36.9
80-----	26	17,797	-72.1		268	21.4
60-----	26	19,507	-67.1		266	2.5
50-----	26	20,619	-62.5		58	2.5
40-----	26	22,017	-56.7		75	8.4
30-----	25	23,857	-52.5		77	14.0
25-----	24	25,036	-50.0		85	16.5
20-----	23	26,503	-47.5		89	12.8
15-----	16	28,429	-43.0		90	18.8
10-----	5	31,257	-38.7			
7------						
5------						

Standard pressure surface (mb)	MIDLAND, TEX. (914 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	871	11.5	70	186	2.1
1,000--	29	109				
950----	29	541				
900----	29	1,003	13.5	59	169	5.8
850----	29	1,486	14.5	42	215	11.9
800----	29	1,997	12.5	27	254	11.7
750----	29	2,531	9.4		269	12.4
700----	29	3,102	4.8	24	276	11.5
650----	29	3,696	.0	28	268	12.6
600----	29	4,337	-4.9	34	253	13.4
550----	29	5,009	-10.0	31	254	16.3
500----	28	5,744	-15.1		255	21.4
450----	28	6,524	-20.7		260	23.7
400----	28	7,393	-27.3		263	25.1
350----	28	8,341	-34.7		267	29.3
300----	27	9,401	-42.8		270	32.8
250----	27	10,609	-51.5		273	39.1
200----	26	12,030	-58.8		273	48.2
175----	26	12,865	-60.1		274	51.7
150----	25	13,829	-60.0		281	49.2
125----	25	14,963	-62.2		275	44.5
100----	23	16,332	-65.6		272	33.6
80-----	22	17,691	-64.6		268	22.9
60-----	22	19,454	-62.0		277	3.7
50-----	22	20,587	-59.3		136	1.6
40-----	22	21,998	-55.9		12	1.7
30-----	18	23,836	-53.2		66	5.6
25-----	15	25,015	-50.0		62	3.3
20-----	15	26,482	-47.1			
15-----	13	28,406	-42.8			
10-----						
7------						
5------						

Standard pressure surface (mb)	MONTGOMERY, ALA (1011 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	61	14.0	83	351	2.3
1,000--	30	151	15.3	75		.0
950----	30	583	15.4	60	212	5.1
900----	30	1,044	13.4	58	230	7.4
850----	30	1,524	11.2	56	245	8.4
800----	30	2,029	8.8	51	252	10.5
750----	30	2,556	6.2	45	257	10.5
700----	30	3,123	3.2	39	260	11.7
650----	30	3,716	-.1		258	13.8
600----	30	4,357	-4.0		256	14.2
550----	30	5,032	-8.4		262	15.9
500----	30	5,771	-13.7		263	18.8
450----	30	6,553	-19.4		257	21.0
400----	30	7,429	-25.8		259	21.4
350----	30	8,383	-32.9		261	26.0
300----	30	9,449	-41.2		263	29.7
250----	30	10,663	-50.4		262	34.4
200----	30	12,087	-59.2		264	40.8
175----	30	12,921	-60.1		264	45.1
150----	30	13,884	-60.0		262	47.6
125----	30	15,019	-61.6		265	43.5
100----	30	16,392	-64.8		265	34.8
80-----	29	17,754	-65.5		269	25.5
60-----	29	19,516	-62.3		269	10.3
50-----	29	20,651	-58.3		255	6.6
40-----	28	22,066	-55.4		299	1.9
30-----	28	23,916	-51.7		340	1.6
25-----	27	25,102	-49.7			.0
20-----	25	26,573	-47.3		241	3.5
15-----	21	28,501	-43.5		236	1.2
10-----	11	31,245	-40.5			
7------						
5------						

Standard pressure surface (mb)	NANTUCKET, MASS. (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	14	6.2	81	226	5.8
1,000--	30	131	6.8	75	221	3.5
950----	30	554	7.0	67	249	8.9
900----	30	998	6.6	63	263	14.0
850----	30	1,467	5.0	59	271	20.4
800----	30	1,961	2.9	58	275	24.7
750----	30	2,477	.4	54	271	27.4
700----	30	3,032	-2.5	54	270	27.8
650----	30	3,610	-6.0	52	274	32.1
600----	30	4,240	-9.4	48	270	37.3
550----	30	4,901	-13.7	45	270	37.1
500----	30	5,626	-18.6	44	270	40.0
450----	30	6,396	-23.6	46	269	42.7
400----	30	7,257	-29.6	44	275	50.1
350----	30	8,197	-36.4		274	51.9
300----	30	9,247	-44.3		280	52.1
250----	30	10,448	-52.1		295	54.0
200----	30	11,872	-57.8		296	49.9
175----	30	12,710	-58.8		286	48.8
150----	30	13,682	-56.9		283	42.0
125----	30	14,837	-57.4		277	34.8
100----	29	16,249	-58.4		285	29.3
80-----	29	17,649	-58.9		287	18.7
60-----	29	19,463	-56.6		287	12.4
50-----	29	20,623	-55.1		291	10.9
40-----	28	22,054	-53.2		281	10.1
30-----	28	23,917	-50.9		280	11.1
25-----	27	25,108	-49.6		299	12.4
20-----	26	26,582	-47.8		289	12.8
15-----	21	28,474	-46.4		298	17.5
10-----	19	31,186	-43.4		289	23.5
7------	10	33,646	-39.1			
5------	7	35,992	-36.1			

Standard pressure surface (mb)	NASHVILLE, TENN. (996 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	177	10.8	78	188	1.2
1,000--	29	145				
950----	29	571	12.7	61	233	7.8
900----	29	1,028	10.6	59	242	9.1
850----	29	1,503	8.3	55	251	12.8
800----	29	2,003	6.0	51	252	15.5
750----	29	2,527	3.3	50	254	15.2
700----	29	3,087	.4	45	254	17.3
650----	29	3,674	-2.9	46	258	18.5
600----	29	4,310	-6.9	43	255	21.2
550----	29	4,977	-11.3	41	261	25.1
500----	29	5,710	-16.1		259	29.0
450----	29	6,486	-21.8		257	32.6
400----	29	7,355	-28.1		258	35.6
350----	29	8,300	-34.9		260	36.9
300----	29	9,360	-42.6		265	42.7
250----	29	10,568	-51.5		260	45.3
200----	29	11,988	-60.1		260	48.6
175----	29	12,818	-61.2		269	47.2
150----	28	13,781	-59.3		267	43.9
125----	27	14,917	-60.2		267	37.5
100----	27	16,302	-62.1		269	29.3
80-----	25	17,688	-62.7		270	20.8
60-----	25	19,471	-60.0		278	9.7
50-----	24	20,615	-58.2		280	5.4
40-----	24	22,029	-55.8		289	3.3
30-----	21	23,873	-52.8		286	3.9
25-----	21	25,055	-50.9		256	3.9
20-----	21	26,512	-49.7		227	6.0
15-----	16	28,427	-47.3		235	5.8
10-----	11	31,075	-45.8			
7------						

Standard pressure surface (mb)	N. Y. INT. AP, IDLEWILD (1016 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	8.0	76	289	2.9
1,000--	30	135	8.0	71	273	4.7
950----	30	558	8.2	67	276	10.3
900----	30	1,006	7.5	62	283	14.4
850----	30	1,475	5.4	58	281	17.7
800----	30	1,969	3.1	53	275	21.8
750----	30	2,489	.4	49	273	24.7
700----	30	3,041	-2.1	51	271	28.6
650----	30	3,624	-5.7	47	270	31.7
600----	30	4,250	-9.5	49	270	35.4
550----	30	4,913	-13.8	47	277	38.9
500----	30	5,635	-18.4	40	271	40.6
450----	30	6,407	-23.7	41	271	44.1
400----	30	7,263	-29.7	38	271	48.2
350----	30	8,202	-36.4		271	52.1
300----	30	9,254	-44.0		270	56.0
250----	30	10,455	-52.1		273	56.3
200----	30	11,874	-59.0		275	57.1
175----	30	12,710	-59.2		279	51.3
150----	30	13,679	-57.7		276	44.1
125----	30	14,831	-57.9		273	35.8
100----	30	16,234	-59.4		276	29.5
80-----	30	17,632	-59.3		280	20.6
60-----	30	19,440	-57.5		285	13.0
50-----	30	20,597	-55.7		285	8.4
40-----	30	22,025	-53.7		271	8.9
30-----	30	23,886	-50.9		274	10.3
25-----	26	25,083	-49.1		279	10.5
20-----	26	26,553	-47.5		275	12.6
15-----	25	28,461	-46.0		270	15.5
10-----	15	31,189	-42.3			
7------	5	33,625	-40.5			

Standard pressure surface (mb)	NOME, ALASKA (1012 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	7	-15.1	68	35	9.1
1,000--	30	94	-12.7	57	16	6.0
950----	30	487	-13.2	53	33	4.5
900----	30	897	-14.4	52	43	5.4
850----	30	1,329	-14.8	47	46	5.1
800----	30	1,787	-16.3	46	41	5.1
750----	30	2,268	-18.3	45	30	4.7
700----	30	2,783	-21.0	45	36	5.1
650----	30	3,326	-23.5	38	38	7.0
600----	30	3,909	-26.8	37	36	5.6
550----	30	4,527	-30.5		77	5.4
500----	30	5,204	-34.7		98	4.1
450----	30	5,929	-39.1		121	4.1
400----	30	6,734	-43.6		139	2.7
350----	30	7,623	-47.4		167	3.7
300----	30	8,636	-49.7		180	3.7
250----	30	9,832	-48.2		191	4.1
200----	30	11,311	-45.9		203	6.0
175----	30	12,202	-45.1		192	6.0
150----	30	13,233	-44.3		183	7.2
125----	30	14,457	-43.8		179	6.6
100----	30	15,956	-43.9		171	6.0
80-----	30	17,453	-44.1		147	6.0
60-----	30	19,384	-44.0		123	8.2
50-----	30	20,609	-43.9		117	10.1
40-----	30	22,108	-43.9		110	12.2
30-----	26	24,052	-43.7		98	17.7
25-----	26	25,279	-43.3		95	21.8
20-----	24	26,782	-42.7		100	26.4
15-----	13	28,806	-40.5		108	32.8
10-----	5	31,568	-39.3			
7------						

Standard pressure surface (mb)	NORFOLK, VA. (1017 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	9	12.7	69	258	2.5
1,000--	30	149	13.7	64	260	4.7
950----	30	578	13.4	54	270	11.7
900----	30	1,035	11.0	51	275	12.4
850----	30	1,510	8.4	49	274	13.4
800----	30	2,009	6.0	43	264	15.5
750----	30	2,532	3.3	40	259	17.7
700----	30	3,092	.1	39	256	21.8
650----	30	3,676	-3.2		258	25.3
600----	30	4,312	-6.8		260	28.0
550----	30	4,978	-11.0		261	31.3
500----	30	5,711	-16.0		261	31.9
450----	30	6,487	-21.7		265	35.2
400----	30	7,354	-25.8		262	35.4
350----	30	8,300	-34.9		269	38.7
300----	30	9,358	-43.1		271	40.4
250----	30	10,563	-51.9		275	45.3
200----	30	11,981	-59.7		278	50.7
175----	30	12,813	-60.8		275	47.2
150----	30	13,775	-59.5		271	42.7
125----	30	14,915	-60.3		267	37.9
100----	30	16,301	-61.4		272	33.0
80-----	30	17,683	-61.9		273	22.7
60-----	29	19,473	-59.5		278	12.0
50-----	29	20,621	-56.9		274	5.6
40-----	29	22,045	-54.1		300	4.7
30-----	29	23,903	-51.3		300	1.9
25-----	29	25,094	-49.3		310	1.2
20-----	29	26,563	-47.6		224	1.4
15-----	28	28,471	-45.4		256	6.0
10-----	20	31,212	-40.5		292	12.6
7------	5	33,714	-37.9			

Standard pressure surface (mb)	NORTH PLATTE, NEBR. (914 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	848	4.3	77	3	3.7
1,000--	30	108				
950----	30	531				
900----	30	975	5.6	66	356	4.3
850----	30	1,443	6.4	52	337	6.8
800----	30	1,940	4.9	50	316	11.7
750----	30	2,457	1.9	50	317	16.5
700----	30	3,017	-1.3	48	311	18.3
650----	30	3,598	-4.9	46	303	19.2
600----	30	4,230	-9.0	46	290	21.0
550----	30	4,892	-13.5	50	283	24.3
500----	30	5,617	-18.2	45	276	26.2
450----	30	6,387	-23.8	43	274	27.6
400----	30	7,246	-30.5	41	275	29.0
350----	30	8,180	-38.2		278	30.5
300----	30	9,222	-46.4		278	35.8
250----	30	10,411	-54.5		277	39.1
200----	30	11,821	-58.7		278	40.8
175----	30	12,662	-57.6		272	40.8
150----	30	13,639	-56.3		272	33.4
125----	30	14,798	-56.4		270	30.5
100----	28	16,207	-58.3		274	21.6
80-----	28	17,610	-58.5		277	15.7
60-----	28	19,422	-57.6		284	8.0
50-----	28	20,575	-56.9		310	4.7
40-----	28	21,992	-55.8		332	4.9
30-----	27	23,836	-54.1		333	4.3
25-----	26	25,001	-53.6		360	5.2
20-----	22	26,457	-52.1		310	5.4
15-----	21	28,324	-50.2		268	8.7
10-----	18	31,023	-44.3		273	15.9
7------	9	33,445	-40.6			

Standard pressure surface (mb)	OAKLAND, CALIF. (1018 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	10.5	83	283	1.4
1,000--	30	155	10.9	77	282	2.9
950----	30	579	9.6	65	304	6.6
900----	30	1,030	8.5	53	309	10.1
850----	30	1,501	6.4	44	307	8.7
800----	30	1,997	4.1	38	290	9.1
750----	30	2,516	1.7	29	283	11.5
700----	30	3,073	-1.3	28	285	14.4
650----	30	3,658	-4.7	30	282	18.5
600----	30	4,287	-8.5	30	281	22.0
550----	30	4,951	-12.9		278	24.5
500----	30	5,678	-17.8		275	29.7
450----	30	6,448	-23.5		274	34.0
400----	30	7,310	-29.9		273	37.9
350----	30	8,248	-36.6		274	43.7
300----	30	9,301	-44.0		275	49.2
250----	30	10,504	-52.0		276	52.7
200----	29	11,935	-58.9		276	52.8
175----	29	12,771	-59.6		277	49.0
150----	29	13,739	-58.6		274	41.2
125----	28	14,892	-60.0		274	36.7
100----	28	16,279	-62.1		271	25.3
80-----	28	17,658	-61.9		272	18.3
60-----	28	19,446	-59.9		277	6.6
50-----	28	20,588	-58.6			.0
40-----	26	21,995	-57.4		67	2.5
30-----	25	23,816	-56.7		69	4.9
25-----	20	24,974	-55.8		58	2.7
20-----	16	26,407	-54.5		274	3.7
15-----	14	28,256	-52.0		268	8.0
10-----						

Standard pressure surface (mb)	OKLAHOMA CITY, OKLA. (968 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	392	11.7	74	174	5.4
1,000--	30	117				
950----	30	547	13.7	59	186	8.7
900----	30	1,004	12.7	54	218	15.3
850----	30	1,482	11.1	48	241	17.9
800----	30	1,986	8.5	41	259	18.1
750----	30	2,513	5.9	35	267	19.0
700----	30	3,078	2.4	34	264	19.2
650----	30	3,664	-1.7	34	262	20.4
600----	30	4,304	-6.2	35	262	24.5
550----	30	4,967	-11.2	34	264	23.7
500----	30	5,703	-16.6	34	260	28.2
450----	30	6,475	-22.5		259	29.7
400----	30	7,339	-29.1		262	32.8
350----	30	8,280	-36.5		259	36.9
300----	30	9,331	-44.1		260	41.2
250----	30	10,533	-52.5		263	42.7
200----	30	11,950	-59.4		264	48.8
175----	30	12,786	-59.3		264	47.4
150----	30	13,755	-58.4		266	42.7
125----	30	14,897	-60.1		264	35.2
100----	29	16,284	-62.4		270	27.4
80-----	28	17,661	-63.1		269	19.4
60-----	28	19,440	-60.1		277	5.6
50-----	28	20,584	-58.0		291	2.7
40-----	28	21,996	-56.1		357	3.1
30-----	25	23,840	-53.4		270	1.4
25-----	21	25,017	-51.7		283	2.1
20-----	14	26,461	-49.3		233	8.4
15-----	7	28,364	-45.4			
10-----						

Standard pressure surface (mb)	OMAHA, NEBR. (964 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	403	6.7	75	354	2.5
1,000--	30	98				
950----	30	527	7.9	65	317	2.7
900----	30	968	7.1	59	285	8.2
850----	30	1,437	6.1	52	287	11.7
800----	30	1,933	4.2	46	288	13.2
750----	30	2,455	1.7	39	292	16.3
700----	30	3,008	-1.7	41	288	18.3
650----	30	3,590	-5.5	45	281	20.0
600----	30	4,218	-9.7	46	283	21.0
550----	30	4,880	-14.2	46	280	25.1
500----	30	5,602	-19.2	46	276	25.8
450----	30	6,374	-24.7	43	276	29.3
400----	30	7,225	-31.1	38	276	32.6
350----	30	8,158	-38.2		280	34.0
300----	30	9,202	-45.9		275	35.4
250----	30	10,394	-53.7		272	42.2
200----	30	11,812	-57.2		269	39.1
175----	30	12,657	-56.7		271	37.1
150----	30	13,637	-55.7		271	32.6
125----	30	14,796	-56.4		277	28.4
100----	30	16,208	-58.0		269	19.8
80-----	30	17,611	-58.6		276	17.1
60-----	30	19,424	-57.7		283	10.7
50-----	30	20,576	-56.9		301	7.4
40-----	29	21,992	-55.8		324	3.9
30-----	28	23,826	-54.8		316	5.1
25-----	26	24,990	-53.9		301	7.6
20-----	24	26,427	-51.9		273	10.1
15-----	21	28,296	-48.0		268	13.4
10-----	13	31,023	-40.1		281	20.6

Standard pressure surface (mb)	PEORIA, ILL (990 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	201	7.6	82	188	4.9
1,000--	30	114				
950----	30	542	9.4	60	227	11.9
900----	30	987	7.5	56	249	16.9
850----	30	1,456	5.3	55	256	18.7
800----	30	1,950	3.1	46	256	20.0
750----	30	2,469	.6	41	259	21.8
700----	30	3,022	-2.6	43	260	23.5
650----	30	3,601	-5.7	39	262	25.6
600----	30	4,230	-9.7	37	266	27.8
550----	30	4,889	-13.9	36	265	28.4
500----	30	5,614	-19.0		265	32.1
450----	30	6,381	-24.5		262	33.6
400----	30	7,238	-30.4		258	36.3
350----	30	8,175	-37.0		257	39.8
300----	30	9,224	-44.7		256	42.9
250----	30	10,421	-53.0		256	45.5
200----	29	11,837	-58.6		257	49.9
175----	29	12,675	-58.4		258	48.2
150----	29	13,650	-56.1		261	39.8
125----	28	14,808	-57.1		262	33.2
100----	25	16,212	-58.1		261	25.5
80-----	24	17,615	-58.7		265	17.5
60-----	24	19,429	-57.7		260	11.3
50-----	24	20,582	-56.7		260	8.4
40-----	21	21,996	-55.6		271	5.2
30-----	21	23,839	-53.7		272	10.9
25-----	18	25,013	-51.7		281	9.3
20-----	15	26,458	-50.0		260	11.7
15-----	10	28,337	-45.3			
10-----						

Standard pressure surface (mb)	PITTSBURGH, PA. (975 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	353	7.3	72	250	2.5
1,000--	30	144				
950----	30	569	9.1	62	251	9.1
900----	30	1,015	7.3	61	267	17.5
850----	30	1,484	4.8	58	273	21.0
800----	30	1,977	2.2	57	270	21.8
750----	30	2,491	-.7	55	266	24.3
700----	30	3,045	-3.5	47	270	25.6
650----	30	3,623	-6.7	42	269	28.8
600----	30	4,249	-10.2	41	268	31.7
550----	30	4,910	-14.2		268	35.6
500----	30	5,633	-18.9	39	267	38.1
450----	30	6,402	-24.4	41	265	40.0
400----	30	7,260	-30.3	40	260	42.6
350----	29	8,192	-37.1		261	46.8
300----	28	9,237	-44.6		265	46.4
250----	28	10,436	-52.8		275	48.0
200----	28	11,856	-58.0		278	55.8
175----	28	12,696	-58.5		276	47.4
150----	28	13,667	-58.0		275	40.0
125----	28	14,816	-58.3		266	33.0
100----	27	16,221	-59.4		273	27.8
80-----	27	17,617	-59.7		276	18.1
60-----	27	19,420	-58.4		277	8.4
50-----	27	20,571	-57.0		287	5.4
40-----	26	21,992	-55.4		310	5.2
30-----	26	23,841	-52.1		292	5.6
25-----	25	25,028	-50.1		248	5.8
20-----	23	26,501	-47.8		238	13.6
15-----	20	28,411	-47.2		248	13.8
10-----	12	31,123	-43.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

APRIL 1960

	POINT ARGUELLO, CALIF. (1004 MB.)						PORTLAND, ME. (1013 MB.)						RAPID CITY, S. DAK. (902 MB.)						ST. CLOUD, MINN. (974 MB.)						ST. PAUL IS., ALASKA (1010 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	113	9.3	88	326	5.6	30	20	3.2	85	269	1.7	30	966	2.4	67	346	5.1	30	316	1.8	81	299	2.5	30	10	- 8.1	76	20	9.3
1,000	30	146			329	7.4	30	126	3.8	77	249	2.7	30	124					30	102					30	88	- 8.7	73	21	9.1
950	30	577	11.4	60	352	15.3	30	546	3.1	68	268	4.5	30	543					30	520	2.7	69	304	4.5	30	481	-10.8	73	15	9.3
900	30	1,026	10.6	49	358	14.4	30	981	2.8	63	278	8.7	30	987			336	6.6	30	956	2.3	64	306	8.4	30	899	-11.8	65	360	8.2
850	30	1,501	8.9	38	341	14.0	30	1,442	1.4	59	274	15.2	30	1,452	3.4	51	325	11.7	30	1,417	1.1	59	298	13.6	30	1,337	-12.5	52	347	9.1
800	30	2,001	7.3	30	325	12.6	30	1,930	.1	55	278	20.0	30	1,943	1.6	52	319	14.2	30	1,903	- .9	54	300	18.1	30	1,798	-14.1	47	336	9.1
750	30	2,530	5.1	25	312	13.6	30	2,446	- 2.1	50	278	24.7	30	2,455	- .5	51	312	16.3	30	2,417	- 3.1	49	297	21.2	30	2,281	-16.1	41	333	10.3
700	30	3,090	2.2	23	295	15.0	30	2,991	- 4.7	49	277	26.8	30	3,010	- 3.9	49	304	18.3	30	2,960	- 6.0	49	291	21.2	30	2,804	-18.4	40	331	9.9
650	30	3,682	- 1.3		281	16.5	30	3,567	- 7.9	48	274	30.5	30	3,585	- 7.6	48	301	21.8	30	3,533	- 9.5	45	285	24.5	30	3,347	-21.5	39	312	11.3
600	30	4,317	- 5.4		280	20.4	30	4,189	-11.7	51	274	35.2	30	4,211	-11.5	45	298	24.9	30	4,151	-13.2	40	283	27.2	30	3,939	-25.2	41	312	11.3
550	30	4,986	-10.1		281	22.7	30	4,846	-15.5	43	273	37.9	30	4,865	-16.2	45	292	27.8	30	4,806	-17.6	41	277	28.8	30	4,558	-29.0	39	301	7.6
500	30	5,721	-15.1		280	26.8	30	5,565	-20.3	42	271	40.8	30	5,584	-21.2	43	287	29.1	30	5,516	-22.1	39	278	35.0	30	5,242	-33.1	37	295	8.0
450	30	6,506	-20.9		278	32.4	30	6,331	-25.5	42	272	42.6	30	6,346	-26.4	42	280	32.4	30	6,280	-27.3	40	279	38.7	30	5,967	-37.9		285	7.6
400	30	7,368	-27.6		275	35.9	30	7,184	-31.4	43	274	44.9	30	7,196	-32.5	41	278	34.2	30	7,121	-33.7		277	42.6	30	6,781	-42.8		273	7.6
350	30	8,314	-35.0		273	39.4	30	8,117	-37.7		278	50.7	30	8,124	-39.6		275	35.8	30	8,045	-40.7		274	45.1	30	7,672	-47.6		265	8.7
300	30	9,371	-43.2		274	43.7	30	9,165	-44.7		278	56.3	30	9,161	-47.3		276	39.4	30	9,078	-47.6		270	47.8	30	8,681	-50.8		261	12.2
250	30	10,576	-52.0		273	47.6	30	10,366	-51.6		278	60.6	30	10,344	-55.6		274	41.4	30	10,266	-53.2		269	49.4	30	9,872	-48.9		274	10.1
200	30	11,992	-60.2		272	48.2	30	11,797	-56.5		274	57.5	29	11,749	-58.4		276	41.2	30	11,695	-55.3		268	44.9	30	11,348	-46.1		268	12.0
175	30	12,824	-60.4		272	47.4	30	12,643	-56.6		277	49.2	29	12,593	-56.5		276	34.8	30	12,550	-54.5		272	41.6	30	12,236	-45.8		275	13.2
150	30	13,786	-60.2		272	46.0	30	13,625	-55.1		274	42.9	29	13,575	-55.1		271	28.4	30	13,539	-53.7		274	35.6	30	13,262	-45.9		271	10.9
125	30	14,921	-61.8		272	39.2	30	14,789	-55.4		274	36.9	29	14,739	-55.5		272	24.3	30	14,709	-54.6		276	27.0	30	14,474	-46.1		245	9.9
100	30	16,295	-64.0		270	29.7	30	16,209	-56.7		275	31.5	28	16,158	-56.7		274	20.4	30	16,136	-55.4		274	23.5	30	15,959	-46.0		234	6.6
80	30	17,660	-64.3		264	20.8	29	17,621	-56.7		274	22.3	28	17,573	-57.0		279	13.6	30	17,555	-56.4		284	17.7	29	17,445	-46.2		194	2.9
60	30	19,431	-61.1		274	8.4	27	19,447	-55.4		273	16.3	28	19,395	-56.8		289	8.2	30	19,382	-56.1		299	10.5	28	19,357	-46.6		115	5.2
50	30	20,566	-59.5		299	2.1	26	20,612	-54.5		289	12.8	28	20,552	-56.1		315	6.0	30	20,542	-55.6		320	6.0	28	20,566	-47.0		101	7.4
40	30	21,967	-58.0		50	1.6	22	22,054	-52.5		268	8.9	28	21,974	-55.4		347	4.7	28	21,963	-55.0		9	5.6	26	22,043	-47.5		96	12.8
30	28	23,786	-56.4		15	2.5	22	23,923	-50.6		264	12.0	26	23,812	-54.9		4	3.9	27	23,814	-53.9		21	7.8	23	23,944	-48.2		97	18.8
25	28	24,946	-55.3		30	2.7	20	25,104	-49.4		267	15.7	25	24,990	-54.1		15	4.7	24	24,983	-53.8		17	5.8	22	25,142	-48.4		89	22.9
20	27	26,374	-53.4		317	2.7	19	26,564	-48.4		274	18.7	24	26,420	-53.0		25	6.8	23	26,421	-52.5		341	6.0	19	26,612	-48.4		90	25.1
15	26	28,239	-50.2		277	8.4	18	28,467	-46.8		280	25.8	19	28,290	-50.1		31	10.7	22	28,291	-49.3		352	6.2	10	28,509	-48.0			
10	24	30,898	-45.7		271	21.8	13	31,166	-44.8		277	35.0	12	30,992	-45.5				6	30,971	-44.3									
7	20	33,271	-43.6		273	32.4	7	33,585	-41.2																					
5	16	35,534	-41.4		277	43.7																								
	SALEM, OREG. (1011 MB.)						SALT LAKE CITY, UTAH (870 MB.)						SAN ANTONIO, TEX. (986 MB.)						SAN DIEGO, CALIF. (1000 MB.)						SAN JUAN, P. R. (1015 MB.)					
SURFACE	30	61	6.2	93	187	4.7	30	1,288	6.0	60	166	6.0	30	243	16.4	85	127	1.7	30	124	11.6	86	352	0.6	30	6	23.5	85	132	2.5
1,000	30	150	7.6	83	190	6.0	30	131					30	122					30	123			22	2.5	30	137	23.4	80	116	8.9
950	30	569	6.5	74	208	7.4	30	555					30	562	16.6	77	153	8.7	30	553	13.8	61	304	1.9	30	588	20.7	79	104	14.2
900	30	1,015	4.2	71	221	10.9	30	1,007					30	1,021	15.1	72	176	13.0	30	1,011	13.5	42	324	3.9	30	1,051	17.9	78	103	13.0
850	30	1,478	1.5	69	228	13.2	30	1,481	8.3	46	171	6.0	30	1,505	13.3	66	189	13.8	30	1,491	11.7	35	293	6.2	30	1,539	15.0	77	101	12.0
800	30	1,964	- 1.3	69	232	15.5	30	1,980	5.9	41	199	7.0	30	2,014	11.5		204	11.5	30	1,997	9.5	27	277	7.6	30	2,051	12.4	71	102	10.1
750	30	2,476	- 4.1	60	236	15.3	30	2,503	2.0	46	231	6.8	30	2,549	9.3	37	221	5.8	30	2,525	6.8		271	10.5	30	2,590	9.8	58	95	8.2
700	30	3,017	- 7.3	58	242	15.5	30	3,059	- 1.9	48	258	7.6	30	3,120	5.6	33	265	6.2	30	3,094	3.5		272	13.2	30	3,162	7.3	51	83	4.1
650	30	3,584	-10.7	55	250	17.5	30	3,637	- 5.9	49	266	11.9	30	3,715	1.2	29	267	9.9	30	3,688	.0		275	15.0	30	3,765	4.3	40	81	1.4
600	30	4,203	-14.8	52	251	19.8	30	4,264	-10.1	48	266	16.5	30	4,359	- 3.6	31	274	14.0	30	4,330	- 3.7		282	20.0	30	4,417	1.2		215	.8
550	30	4,853	-18.9	51	257	22.2	30	4,924	-14.8	44	259	19.6	30	5,032	- 8.7	32	271	17.3	30	5,007	- 8.5		277	23.7	29	5,106	- 2.9		269	4.7
500	30	5,560	-23.3	51	258	24.3	30	5,647	-20.0	43	264	23.3	30	5,773	-14.0	34	264	20.6	30	5,746	-13.8		276	26.8	29	5,861	- 7.6		269	8.4
450	30	6,319	-28.8	49	260	26.4	30	6,416	-25.3	39	265	27.0	29	6,558	-19.7		266	23.7	30	6,529	-19.7		281	28.8	29	6,672	-12.8		279	11.5
400	30	7,156	-34.8	46	265	29.1	30	7,267	-31.6	40	264	30.9	29	7,429	-26.2		264	23.9	30	7,405	-26.4		280	32.6	29	7,563	-19.2		280	20.2
350	29	8,079	-41.5		268	33.8	30	8,198	-38.7		267	32.4	29	8,381	-33.4		261	29.5	30	8,356	-33.7		280	36.7	29	8,543	-26.1		279	25.5
300	28	9,097	-48.8		267	36.1	30	9,240	-46.2		266	37.3	29	9,446	-41.6		267	34.6	30	9,419	-42.0		283	39.6	29	9,640	-34.2		279	35.0
250	28	10,282	-52.9		269	35.9	30	10,431	-54.0		271	37.7	29	10,659	-50.4		273	39.6	30	10,629	-51.1		283	43.7	29	10,890	-43.9		274	44.1
200	28	11,714	-54.7		266	35.9	30	11,846	-58.0		280	38.7	29	12,087	-58.0		280	41.8	30	12,050	-60.1		283	46.0	29	12,351	-55.3		271	53.8
175	28	12,569	-54.0		269	35.6	30	12,688	-57.6		278	35.9	29	12,924	-59.3		278	45.3	30	12,880	-61.6		281	49.5	29	13,191	-61.5		271	54.0
150	28	13,559	-54.2		269	29.0	30	13,667	-56.1		282	28.8	29	13,887	-60.7		279	43.1	30	13,837	-60.9		279	45.7	28	14,135	-67.7		272	49.4
125	28	14,724	-55.3		267	25.5	30	14,822	-57.8		274	23.5	28	15,014	-63.1		279	37.9	30	14,967	-62.5		276	39.1	27	15,221	-72.3		279	38.1
100	27	16,149	-55.3		266	18.7	29	16,228	-59.1		277	20.8	28	16,376	-66.1		272	32.4	30	16,335	-64.5		271	28.0	27	16,519	-76.8		292	22.2
80	27	17,569	-56.3		256	10.1	29	17,627	-59.3		278	12.0	26	17,724	-67.1		273	20.0	30	17,695	-65.6		270	19.2	27	17,797	-77.5		325	8.9
60	27	19,395	-56.0		240	1.9	29	19,432	-58.1		280	4.1	25	19,474	-63.0		238	3.1	30	19,455	-62.4		278	7.6	27	19,478	-68.7		40	6.4
50	27	20,555	-56.0		90	.6	29	20,581	-57.7		331	1.4	25	20,604	-59.3		144	2.1	30	20,585	-60.5		279	2.9	27	20,588	-61.8		61	9.7
40	26	21,976	-55.9		76	3.3	28	21,990	-57.1		359	2.1	24	22,009	-56.2		46	3.3	29	21,985	-58.0		317	1.7	27	21,984	-57.2		78	16.9
30	23	23,812	-55.7		77	5.4	26	23,816	-56.5		47	1.4	24	23,852	-52.2		50	5.1	28	23,807	-56.5		47	1.4	22	23,827	-52.3		92	18.8
25	22	24,978	-55.5		78	6.8	26	24,974	-55.9		10	3.5	24	25,037	-50.0		80	4.5	26	24,973	-54.3		360	1.2	18	25,027	-49.5		100	16.9
20	16	26,420	-54.5		79	12.6	24	26,394	-54.8		334	4.7	24	26,503	-47.2		99	2.1	25	26,406	-52.8		266	2.3	6	26,498	-47.6			
15	15	28,261	-53.3		71	13.2	22	28,244	-52.7		330	3.9	20	28,428	-43.2				21	28,273	-49.6		256	12.8						
10	8	30,872	-50.3				17	30,895	-48.4		314	9.9	5	31,149	-38.6				13	30,967	-44.5									
7	5	33,220	-46.6				10	33,207	-46.5										6	33,343	-43.2									
5							6	35,419	-45.2																					
	SANTA MONICA, CALIF. (1011 MB.)						SAULT STE. MARIE, MICH. (986 MB.)						SEATTLE, WASH. (1002 MB.)						SHEMYA, ALASKA (1006 MB.)						SHREVEPORT, LA. (1007 MB.)					
SURFACE	30	38	13.1	79	29	2.7	30	221	0.7	87	74	2.7	30	125	6.3	89	165	4.9	29	37	0.5	82	104	2.1	30	76	14.4	80	180	3.1
1,000	30	127	13.6	75	21	3.1	30	105					30	139			171	4.7	29	87			44	2.7	30	138	15.1	75	182	4.5
950	30	560	13.9	55	20	3.9	30	518	1.9	79	244	3.3	30	556	5.6	78	203	10.5	29	493	- 3.0	83	97	4.1	30	573	14.9	64	206	10.3
900	30	1,016	13.0	43	339	3.9	30	954	1.1	78	265	8.2	30	1,000	3.6	74	217	12.2	29	922	- 6.1	83	109	4.5	30	1,030	13.1	58	220	11.7
850	30	1,494	10.9	38	298	4.7	30	1,413	- .4	77	264	12.8	30	1,462	1.0	73	222	11.1	29	1,368	- 8.7	79	170	1.6	30	1,509	11.2	48	235	11.9
800	30	1,997	8.4	31	290	7.6	30	1,897	- 2.1	71	270	15.7	30	1,947	- 2.0	69	228	12.6	29	1,836	-11.2	71	222	3.3	30	2,014	8.9	46	242	13.8
750	30	2,522	5.6	27	286	9.3	30	2,409	- 4.3	68	268	18.7	30	2,454	- 5.1	63	232	13.8	29	2,330	-13.5	61	233	5.2	30	2,545	6.0	44	253	13.0
700	30	3,089	2.3		275	11.9	30	2,950	- 6.9	67	266	23.1	30	2,996	- 8.4	56	233	16.1	29	2,852	-16.2	54	253	7.6	30	3,107	2.6	41	255	15.0
650	30	3,676	- 1.4		274	14.8	30	3,522	-10.2	64	265	24.1	30	3,562	-12.0	54	246	16.9	29	3,406	-19.3	51	265	9.7	30	3,696	- 1.0	37	259	14.0
600	30	4,318	- 5.6		277	19.2	30	4,139	-13.7	59	267	30.3	30	4,175	-16.0	56	251	18.1	29	3,998	-22.8	45	270	13.0	30	4,337	- 5.1	36	264	14.8
550	30	4,986	- 9.9		275	21.6	30	4,790	-17.6	59	269	31.3	30	4,821	-20.1	48	252	21.4	29	4,629	-26.5	43	292	14.4	30	5,006	- 9.5	38	265	16.5
500	30	5,724	-16.1		279	24.7	30	5,504	-22.3	54	267	33.4	30	5,525	-24.8	45	254	22.3	29	5,314	-31.0		272	17.5	30	5,744	-14.8		264	19.8
450	30	6,504	-20.8		282	29.5	30	6,262	-28.0	50	266	36.1	30	6,276	-30.2	42	254	25.1	29	6,051	-35.7		282	22.5	30	6,523	-20.6		261	20.8
400	30	7,375	-27.3		282	33.4	30	7,107	-34.0	47	265	38.5	30	7,112	-35.8		261	29.1	29	6,864	-41.3		292	34.2	30	7,393	-27.2		259	25.3
350	30	8,322	-34.5		280	36.1	30	8,029	-40.9		266	43.9	30	8,029	-42.1		261	33.6	29	7,761	-46.7		283	32.8	30	8,341	-34.4		258	28.0
300	30	9,381	-40.0		280	37.9	30	9,062	-47.4		268	49.2	30	9,058	-48.2		264	33.6	29	8,773	-51.5		278	34.2	30	9,401	-42.4		257	32.3
250	30	10,586	-52.1		278	40.8	30	10,252	-53.1		265	53.6	30	10,245	-53.3		264	33.0	29	9,953	-52.0		270	42.9	30	10,609	-51.6		256	39.2
200	30	12,004	-60.0		279	43.9	30	11,680	-55.4		273	47.8	30	11,676	-54.2		261	30.9	28	11,408	-50.2		265	37.3	30	12,027	-59.7		261	42.6
175	30	12,834	-61.1		275	44.9	30	12,532	-54.8		273	42.9	30	12,535	-52.5		261	29.9	28	12,282	-49.5		264	32.4	30	12,861	-59.8		264	42.2
150	30	13,793	-60.5		274	43.5	30	13,523	-53.3		270	37.3	30	13,533	-52.3		261	25.8	28	13,292	-49.7		261	28.6	30	13,823	-60.3		262	42.9
125	30	14,924	-62.4		273	37.9	30	14,695	-54.2		272	30.9	30	14,710	-52.9		263	19.4	27	14,481	-49.6		254	22.5	30	14,954	-62.4		263	38.1
100	29	16,300	-64.4		273	28.4	30	16,121	-55.6		277	23.9	30	16,146	-54.2		259	13.0	27	15,943	-49.6		251	17.7	30	16,326	-64.2		264	30.9
80	29	17,660	-65.4		274	20.6	29	17,537	-56.5		282	19.0	29	17,581	-54.7		256	8.2	27	17,407	-49.2		238	9.1	30	17,687	-65.3		264	22.0
60	27	19,422	-62.2		267	9.7	29	19,362	-56.2		284	12.4	28	19,421	-54.8		277	2.1	27	19,297	-49.3		169	5.1	30	19,449	-61.9		263	7.4
50	27	20,552	-60.2		282	5.2	29	20,520	-56.1		289	9.1	26	20,592	-54.9		51	2.5	27	20,492	-49.9		123	6.0	30	20,586	-58.6		278	3.7
40	27	21,949	-58.6		314	4.1	28	21,939	-56.3		309	6.0	25	22,021	-54.7		64	7.4	26	21,953	-50.2		99	11.1	30	21,997	-55.9		269	5.2
30	27	23,764	-56.8		322	3.7	27	23,772	-55.3		306	5.6	23	23,867	-54.5		70	11.7	25	23,834	-50.4		95	16.5	30	23,838	-53.0		293	2.5
25	26	24,919	-56.1		311	4.3	24	24,939	-54.1		286	6.2	23	25,036	-54.2		71	15.0	22	25,024	-50.1		89	20.8	30	25,019	-51.0		230	2.7
20	26	26,343	-54.1		300	8.2	24	26,375	-52.5		252	10.3	17	26,485	-53.0		76	15.3	20	26,478	-49.6		85	26.4	30	26,478	-48.4		220	3.5
15	22	28,207	-50.8		274	14.4	20	28,260	-49.5		237	15.3	14	28,347	-51.6		68	14.0	15	28,333	-48.7		79	29.5	28	28,387	-44.6		236	7.6
10	12	30,867	-47.9		271	25.5	10	30,950	-43.9				8	31,050	-46.9				10	30,990	-46.5				25	31,132	-40.0		250	15.5
7																									11	33,635	-37.2			
5																									6	35,996	-36.1			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

APRIL 1960

Standard pressure surface (mb.)	SPOKANE, WASH. (931 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	722	3.9	74	164	2.7
1,000--	30	134				
950----	30	556				
900----	30	998	5.3	60	209	2.9
850----	30	1,463	3.1	56	228	6.4
800----	30	1,952	.0	55	240	8.5
750----	30	2,460	- 3.5	54	247	11.7
700----	30	3,008	- 7.0	50	252	13.8
650----	30	3,576	-11.1	49	254	16.1
600----	30	4,192	-15.1	46	258	20.0
550----	30	4,840	-19.3	49	249	21.8
500----	30	5,547	-23.9	50	254	24.7
450----	30	6,300	-29.3	49	256	28.4
400----	30	7,140	-35.2	46	259	31.5
350----	30	8,059	-41.7		263	35.4
300----	30	9,088	-48.7		261	37.5
250----	30	10,272	-53.7		264	39.4
200----	30	11,703	-52.8		268	35.4
175----	30	12,565	-52.1		268	28.8
150----	30	13,563	-52.1		268	22.5
125----	29	14,735	-53.1		266	16.7
100----	29	16,171	-54.1		272	13.6
80-----	27	17,595	-55.3		273	8.4
60-----	26	19,434	-54.4		310	3.3
50-----	26	20,601	-54.3		1	2.1
40-----	24	22,032	-54.3		58	5.8
30-----	22	23,874	-54.3		54	8.7
25-----	22	25,042	-54.0		56	10.9
20-----	19	26,492	-52.6		67	13.8
15-----	18	28,348	-51.0		65	13.8
10-----	11	30,996	-48.1			
7------						
5------						

Standard pressure surface (mb.)	TAMPA, FLA. (1018 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	8	18.3	88	68	4.5
1,000--	30	157	18.9	81	102	7.8
950----	30	594	17.5	71	134	7.6
900----	30	1,059	14.7	71	156	4.5
850----	30	1,541	12.3	62	176	3.7
800----	30	2,048	10.2	51	195	3.5
750----	30	2,578	7.5	43	301	1.2
700----	30	3,149	4.7	37	274	2.9
650----	29	3,742	1.3		271	6.8
600----	29	4,389	- 2.5		269	7.8
550----	29	5,066	- 7.0		264	9.7
500----	29	5,812	-12.1		258	16.3
450----	29	6,604	-17.9		262	20.8
400----	29	7,483	-24.1		264	22.7
350----	29	8,444	-31.0		266	24.1
300----	29	9,521	-39.1		265	31.1
250----	29	10,748	-48.3		268	36.5
200----	29	12,189	-56.7		270	41.0
175----	29	13,031	-59.3		269	47.6
150----	28	13,992	-61.8		263	52.1
125----	24	15,116	-64.3		268	46.8
100----	20	16,470	-68.2		277	39.1
80-----	20	17,801	-69.8		271	28.8
60-----	19	19,534	-64.3		280	14.8
50-----	16	20,664	-59.7			
40-----	15	22,075	-55.3			
30-----	12	23,921	-51.5			
25-----	12	25,112	-48.6			
20-----	9	26,587	-44.0			
15-----	7	28,530	-40.7			
10-----						
7------						
5------						

Standard pressure surface (mb.)	TATOOSH IS., WASH. (1011 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	31	7.9	85	188	5.4
1,000--	30	123	7.5	83	198	7.8
950----	30	538	6.0	72	205	8.4
900----	30	986	3.3	70	210	10.3
850----	30	1,447	.3	67	223	11.1
800----	30	1,931	- 2.8	64	218	13.0
750----	30	2,434	- 5.8	62	221	13.8
700----	30	2,977	- 9.4	58	224	16.3
650----	30	3,540	-12.7	54	228	16.1
600----	30	4,154	-16.2	51	235	18.5
550----	30	4,796	-20.3	48	241	21.2
500----	30	5,504	-25.2	44	243	24.3
450----	30	6,253	-30.6	44	246	23.9
400----	30	7,089	-36.5	42	253	28.0
350----	30	8,002	-42.6		259	33.0
300----	30	9,029	-48.9		255	33.4
250----	30	10,213	-53.4		256	35.9
200----	30	11,647	-53.5		253	31.7
175----	30	12,510	-52.1		257	26.6
150----	30	13,509	-51.9		257	22.9
125----	30	14,688	-52.8		255	19.6
100----	30	16,126	-54.0		251	12.8
80-----	28	17,551	-53.7		251	6.2
60-----	27	19,397	-53.9		200	.8
50-----	26	20,570	-53.8		89	1.4
40-----	23	22,002	-54.0		77	5.4
30-----	17	23,851	-54.3		69	6.2
25-----	16	25,022	-54.0		71	9.3
20-----	15	26,461	-53.4		69	13.6
15-----	13	28,329	-52.4		70	15.5
10-----						
7------						
5------						

Standard pressure surface (mb.)	TOPEKA, KANS. (981 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	269	9.6	75	183	2.9
1,000--	30	104				
950----	30	532	11.1	64	188	7.6
900----	30	981	9.5	57	228	12.0
850----	30	1,454	7.8	55	261	14.4
800----	30	1,952	5.3	51	271	16.3
750----	30	2,473	2.6	50	272	18.1
700----	30	3,032	- .6	50	275	21.6
650----	30	3,613	- 4.4	46	279	22.5
600----	30	4,247	- 8.2	43	276	23.5
550----	30	4,911	-12.5	41	272	25.3
500----	30	5,639	-17.4	37	270	29.0
450----	30	6,412	-23.0		265	32.6
400----	30	7,272	-29.6		270	35.9
350----	30	8,209	-37.2		270	37.5
300----	30	9,256	-45.2		270	40.2
250----	30	10,452	-52.9		265	44.3
200----	30	11,870	-58.6		266	47.0
175----	30	12,709	-58.5		267	45.1
150----	30	13,683	-56.6		268	38.5
125----	30	14,837	-57.9		274	31.3
100----	30	16,241	-59.5		269	24.3
80-----	30	17,636	-59.9		270	19.0
60-----	30	19,436	-58.6		276	10.3
50-----	30	20,585	-57.1		296	4.3
40-----	30	22,001	-55.9		294	3.9
30-----	29	23,837	-54.6		298	5.8
25-----	28	25,005	-53.2		295	7.6
20-----	26	26,444	-51.8		278	10.1
15-----	24	28,320	-48.5		266	15.5
10-----	21	31,012	-42.9		271	26.0
7------	9	33,434	-39.6			
5------	6	35,686	-36.9			

Standard pressure surface (mb.)	TUCSON, ARIZ. (923 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	781	11.4	36	158	5.2
1,000--	30	110				
950----	30	543				
900----	30	1,005	17.4	23	186	3.3
850----	30	1,491	15.0	22	276	2.7
800----	30	2,000	11.4	25	271	5.2
750----	30	2,530	7.7	25	255	7.4
700----	30	3,100	4.0		240	11.3
650----	30	3,690	.3		250	13.2
600----	30	4,336	- 3.4		254	16.5
550----	30	5,008	- 8.0		264	18.8
500----	30	5,752	-13.5		269	22.7
450----	30	6,538	-19.6		272	23.9
400----	30	7,409	-26.3		274	27.6
350----	30	8,360	-33.6		276	31.3
300----	30	9,422	-42.1		276	35.6
250----	29	10,633	-51.0		277	44.5
200----	29	12,057	-58.5		275	49.4
175----	29	12,894	-59.5		272	47.4
150----	28	13,861	-60.1		272	45.1
125----	28	14,992	-63.0		266	39.6
100----	27	16,356	-65.2		262	32.3
80-----	27	17,714	-65.7		268	19.8
60-----	26	19,474	-62.6		254	4.1
50-----	25	20,606	-59.9		292	1.9
40-----	25	22,008	-57.7		7	1.7
30-----	24	23,835	-55.4		34	2.7
25-----	23	24,999	-53.8		343	2.9
20-----	23	26,442	-51.3		280	6.0
15-----	21	28,326	-48.2		269	10.9
10-----	19	31,013	-43.8		271	19.4
7------	6	33,395	-41.6			
5------						

Standard pressure surface (mb.)	WASHINGTON, D. C. (1006 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	88	10.5	74	251	2.1
1,000--	30	138			240	3.3
950----	30	568	11.8	57	278	11.1
900----	30	1,019	9.4	55	282	14.2
850----	30	1,491	6.8	51	276	15.2
800----	30	1,987	4.1	52	272	17.1
750----	30	2,509	1.3	49	268	20.6
700----	30	3,062	- 1.5	42	265	22.0
650----	30	3,648	- 4.8	41	265	25.3
600----	30	4,274	- 8.5	39	264	29.1
550----	30	4,939	-12.7	39	268	31.3
500----	30	5,665	-17.2		264	34.0
450----	30	6,438	-22.6	37	265	37.9
400----	30	7,302	-28.7	36	267	41.0
350----	30	8,245	-35.6		276	42.0
300----	30	9,299	-43.7		278	45.5
250----	30	10,501	-52.3		279	43.7
200----	30	11,918	-59.4		280	48.2
175----	30	12,752	-59.6		276	42.7
150----	30	13,719	-58.8		273	36.5
125----	30	14,862	-59.7		273	34.8
100----	30	16,256	-60.1		276	26.6
80-----	30	17,645	-60.6		281	16.3
60-----	29	19,441	-59.1		286	8.2
50-----	29	20,589	-57.0		290	4.1
40-----	28	22,010	-54.3		292	3.7
30-----	26	23,864	-51.6		314	3.3
25-----	26	25,051	-49.9		27	1.4
20-----	25	26,516	-48.4		218	.6
15-----	18	28,400	-47.9		283	6.2
10-----	8	31,093	-42.9			
7------						

Standard pressure surface (mb.)	WINNEMUCCA, NEV. (869 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,310	1.6	61	218	1.7
1,000--	30	159				
950----	30	579				
900----	30	1,025				
850----	30	1,491	6.6	50	207	2.5
800----	30	1,987	3.9	49	254	6.6
750----	30	2,505	.1	52	259	7.6
700----	30	3,057	- 3.6	54	254	10.3
650----	30	3,634	- 7.3	50	261	15.0
600----	30	4,258	-11.0	43	259	18.3
550----	30	4,914	-15.1	38	259	22.0
500----	30	5,636	-19.7	35	260	26.8
450----	30	6,402	-25.5	37	255	26.2
400----	30	7,253	-31.9	36	248	29.5
350----	30	8,183	-39.0		254	29.7
300----	30	9,223	-46.6		261	31.1
250----	30	10,415	-53.4		267	36.3
200----	30	11,838	-56.9		267	38.3
175----	30	12,684	-56.5		268	36.3
150----	30	13,665	-56.2		266	31.3
125----	29	14,823	-57.3		272	25.8
100----	27	16,226	-58.8		263	17.5
80-----	26	17,621	-59.1		277	7.6
60-----	25	19,430	-57.6		28	1.7
50-----	22	20,585	-56.5		60	3.7
40-----	19	21,999	-56.2		77	5.1
30-----	16	23,841	-55.7		75	7.6
25-----	15	25,005	-55.0		74	10.7
20-----	13	26,437	-53.7		70	10.5
15-----	8	28,288	-50.4			
10-----	6	30,990	-45.0			
7------						

Standard pressure surface (mb.)	YAKUTAT, ALASKA (1006 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	12	0.7	83	88	1.7
1,000--	30	63			14	.8
950----	30	477	2.4	68	105	2.3
900----	30	913	- .5	67	139	2.5
850----	30	1,369	- 3.5	69	166	4.3
800----	30	1,846	- 6.7	66	155	4.9
750----	30	2,344	- 9.9	65	159	5.4
700----	30	2,877	-13.1	62	154	8.0
650----	30	3,434	-16.4	58	165	10.3
600----	30	4,037	-20.4	56	166	14.2
550----	30	4,673	-24.4	54	171	19.2
500----	30	5,365	-29.1	53	167	20.0
450----	30	6,107	-34.4	50	164	20.2
400----	30	6,927	-40.4		159	17.3
350----	30	7,825	-46.5		161	20.8
300----	29	8,842	-51.1		174	20.0
250----	29	10,025	-51.1		168	15.3
200----	29	11,485	-48.6			
175----	29	12,365	-47.8			
150----	29	13,385	-46.9			
125----	29	14,591	-47.4			
100----	29	16,063	-48.3			
80-----	28	17,530	-48.0			
60-----	27	19,433	-47.8			
50-----	27	20,634	-48.1			
40-----	27	22,104	-48.1			
30-----	26	24,000	-48.2			
25-----	26	25,199	-48.4			
20-----	24	26,675	-47.9			
15-----	20	28,590	-46.6			
10-----	10	31,317	-45.7			
7------						

Standard pressure surface (mb.)	YUCCA FLAT, NEV (879 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	1,196	6.1	44	242	1.7
1,000--	29	122				
950----	29	553				
900----	29	1,006				
850----	29	1,479	11.4	33	314	1.9
800----	29	1,983	8.4	34	237	4.5
750----	29	2,508	5.1	36	242	6.6
700----	29	3,073	1.9	35	257	9.7
650----	29	3,664	- 2.1	34	263	11.9
600----	29	4,298	- 6.3	30	273	15.2
550----	29	4,968	-11.1		276	18.8
500----	29	5,698	-16.5		275	22.2
450----	29	6,472	-22.7		270	24.1
400----	29	7,335	-29.3		274	27.4
350----	29	8,274	-36.4		275	33.4
300----	29	9,327	-43.8		277	39.1
250----	29	10,531	-51.7		275	46.4
200----	29	11,955	-58.3		273	46.6
175----	29	12,792	-59.0		268	44.3
150----	28	13,760	-57.7		273	41.4
125----	28	14,904	-59.8		270	34.8
100----	26	16,292	-61.5		270	27.0
80-----	25	17,669	-62.3		263	19.0
60-----	25	19,460	-59.4		269	4.5
50-----	25	20,606	-57.9		337	1.7
40-----	24	22,019	-57.0		7	1.4
30-----	21	23,848	-55.5		47	4.7
25-----	19	25,010	-54.5		75	1.9
20-----	18	26,446	-52.6		287	6.0
15-----	16	28,320	-49.0		276	6.2
10-----	10	30,990	-43.5		274	15.2
7------	7	33,419	-39.6			

Note: All observations scheduled at 1200, G. C. T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant wind speed is biased toward a lower value as the number of observations on which the resultant is based lessens. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. APRIL 1960

Date	Sun's zenith distance								
	A. M.					P. M.			
	78.7°	75.7°	70.7°	60.0°	*	60.0°	70.7°	75.7°	78.7°
	ALBUQUERQUE, N. MEX. #								
	Air mass								
	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
April									
2	0.76	0.85	0.97	1.11	----	1.06	0.89	0.78	0.67
3	.83	.91	1.03	1.15	1.27	1.08	.93	.84	.72
4	.79	.87	.97	1.11	1.22	1.08	.95	.87	.78
5	.77	.87	.97	1.09	1.23	1.04	.89	.77	.67
6	.75	.83	.94	1.03	1.21	----	----	----	----
8	.67	.77	.89	1.05	1.19	.99	.85	.73	.64
9	H .59	H .69	H .79	H .96	----	----	H .81	H .68	H .59
10	.70	.81	.93	1.05	1.20	----	.90	.79	----
11	.71	.81	.93	1.07	1.23	----	----	----	----
16	.51	.63	.77	.95	1.11	.75	.55	.38	.33
17	----	----	----	----	1.21	1.04	.82	.63	.48
18	H .44	H .54	H .67	H .83	H 1.11	H .95	H .70	H .53	H .43
20	----	.61	.71	.87	1.09	.90	.81	.69	.59
21	1.39	----	.64	.85	1.05	----	----	----	----
23	----	----	----	----	1.08	----	.75	----	----
24	----	----	----	----	1.11	.87	.75	.65	.57
25	.64	.72	.83	.98	1.07	.95	.81	.71	.62
28	----	----	----	----	1.19	----	----	----	----
30	.74	.78	.86	1.01	----	----	----	----	----
Averages	0.74	0.82	0.93	1.07	1.19	1.03	0.89	0.78	0.67
	MAUNA LOA OBS., HAWAII †								
	Air mass								
	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
April									
1	1.21	1.28	1.38	1.49	----	----	----	----	----
3	H 1.08	H 1.17	H 1.27	H 1.41	H 1.59	----	----	----	----
4	K 1.12	K 1.22	K 1.33	K 1.46	----	----	----	----	----
5	1.12	1.22	1.34	1.48	----	----	----	----	----
8	1.21	1.30	1.41	1.53	----	----	----	----	----
9	1.15	1.24	1.36	1.48	----	----	----	----	----
10	1.15	1.25	1.37	1.52	----	----	----	----	----
11	1.23	1.30	1.41	1.52	----	----	----	----	----
12	1.20	1.28	1.38	1.51	1.63	----	1.35	1.25	1.17
13	1.21	1.29	1.39	1.52	----	1.50	1.37	1.27	1.20
16	----	1.27	1.37	1.42	----	----	----	----	----
17	1.16	1.25	1.35	1.47	----	----	----	----	----
19	1.19	1.27	1.37	1.50	----	----	----	----	----
22	1.17	1.26	1.38	1.50	----	----	----	----	----
23	1.20	1.28	1.38	1.51	1.66	1.48	1.36	1.26	1.17
24	1.16	1.24	1.34	1.50	1.65	1.48	1.35	1.25	1.17
25	1.22	1.31	1.41	1.52	1.65	----	----	----	----
26	1.21	1.29	1.38	1.50	----	----	----	----	----
Averages	1.18	1.26	1.37	1.49	1.64	1.49	1.36	1.26	1.18

† Station closed April 27 through April 30.
* Values corresponding to true solar noon.
# Data should be considered doubtful due to moisture in instrument
H Haze.
K Smoke.
S Slight haze - indeterminable.
M Moderate haze - indeterminable.

Date	Sun's zenith distance								
	A. M.					P. M.			
	78.7°	75.7°	70.7°	60.0°	*	60.0°	70.7°	75.7°	78.7°
	TUCSON, ARIZ.								
	Air mass								
	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
April									
1	0.68	----	----	----	----	----	----	0.52	0.41
2	.69	0.82	----	----	----	----	----	.87	.75
3	.77	.90	1.06	----	1.39	----	1.04	.94	.83
4	.88	.97	1.11	----	----	----	----	----	.79
5	.86	.94	1.07	1.21	----	----	----	----	.79
6	.77	.87	1.00	----	----	----	----	----	----
7	----	----	----	----	----	----	----	.80	.91
8	.86	----	1.09	----	----	----	----	----	----
9	----	.93	1.06	1.23	----	----	----	.84	.71
10	.79	.91	1.05	1.22	----	----	----	----	----
13	.56	.71	.89	----	----	----	----	----	----
14	.87	.96	1.09	----	----	----	----	----	----
16	.76	----	----	1.15	----	----	----	.85	.73
17	.68	.79	.93	1.12	----	----	.91	.77	.65
18	H .40	H .54	H .75	----	----	----	.84	.69	.57
20	.63	.74	.90	----	----	----	----	----	----
24	.86	.95	1.08	1.23	----	----	----	.93	.82
25	.86	.96	1.10	1.24	1.45	1.23	1.26	.92	.83
28	----	----	----	----	H 1.43	----	----	----	----
29	----	1.06	----	----	----	----	1.03	.96	.79
30	.75	.86	1.02	1.18	----	1.18	.99	.84	.75
Averages	0.75	0.87	1.01	1.20	1.42	1.20	1.01	0.83	0.74
	OMAHA, NEBR.								
	Air mass								
	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
April									
5	----	----	M 0.76	----	M 1.12	----	----	----	----
7	----	----	----	----	S 1.21	----	----	----	----
8	S 0.58	S 0.69	S .81	S 0.98	----	----	----	S 0.55	S 0.41
9	----	----	----	----	M 1.13	----	----	----	----
11	----	----	----	----	M 1.10	M 0.87	----	----	----
20	----	----	----	----	----	M .78	M 0.60	M .29	----
21	----	----	----	M .82	----	----	----	----	----
26	S 0.54	S 0.67	S .79	S .95	----	----	----	----	----
Averages	0.56	0.68	0.79	0.92	1.14	0.83	0.60	0.42	0.41
	MADISON, WIS.								
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
April									
9	----	S 0.99	S 1.15	S 1.31	----	----	----	----	----
12	----	----	----	S 1.29	----	----	----	----	----
18	S 0.91	1.04	S 1.18	S 1.30	----	----	----	----	----
21	M .75	M .78	----	----	M 1.35	----	----	----	----
22	----	----	M .87	M 1.04	----	----	----	----	----
27	S .88	S .99	S 1.13	----	----	----	----	----	----
Averages	0.85	0.95	1.08	1.24	1.35	----	----	----	----

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Albuquerque, N. Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Boise, Idaho	Brownsville, Tex.	Canton Island Pacific Area	Cape Hatteras, N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.	Davis, Calif.	Dodge City, Kans.	El Paso, Tex.	Ely, Nev.	Flaming Gorge, Utah	Ft. Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Lander, Wyo.	Laramie, Wyo.
Apr. 1-----	526	---	164	186	142	552	389	---	70	447	142	637	678	208	569	168	427	206	591	486	659	482	389	614	407	552	570	461	477	561	656	385	688	121	283	469	606
Apr. 2-----	675	---	165	46	308	121	497	480	(494)	450	103	622	510	598	131	161	203	436	553	576	612	666	627	---	507	493	532	608	401	237	182	476	700	398	373	585	630
Apr. 3-----	701	---	42	43	468	79	503	499	461	584	294	---	205	404	315	114	191	483	536	664	702	668	634	590	480	243	413	651	500	86	150	139	684	90	261	609	502
Apr. 4-----	694	---	259	73	280	53	519	---	520	565	627	621	99	---	100	90	357	519	600	589	703	650	648	632	481	256	540	658	497	187	77	362	686	124	449	618	605
Apr. 5-----	697	---	266	477	294	472	497	516	475	559	623	641	381	129	590	227	651	425	465	660	698	644	632	601	442	682	269	651	315	567	608	336	677	106	626	607	607
Apr. 6-----	684	---	328	489	262	575	541	512	600	552	643	657	722	246	639	217	448	427	520	---	706	626	587	635	503	714	529	546	306	643	688	406	678	288	628	581	370
Apr. 7-----	---	---	198	479	---	474	550	506	505	434	605	590	247	469	586	251	629	451	612	593	681	596	401	588	533	687	610	463	537	328	637	554	718	271	620	390	465
Average-------	663	---	203	256	292	332	499	503	(446)	513	434	628	406	342	419	175	415	421	554	595	680	619	560	610	479	518	495	577	433	373	428	380	690	200	463	551	541
Apr. 8-----	---	---	96	475	152	374	458	463	630	560	613	650	---	566	590	233	668	327	618	218	628	641	627	87	548	665	600	646	543	636	481	411	721	333	504	625	589
Apr. 9-----	672	550	68	465	312	388	348	498	641	564	524	619	642	180	565	196	678	412	622	661	655	677	639	631	531	679	529	644	380	665	337	407	739	310	490	548	475
Apr. 10-----	665	519	315	515	332	643	472	420	512	603	440	638	627	536	666	439	602	513	622	620	707	680	590	534	551	748	116	635	207	642	757	624	745	249	615	595	604
Apr. 11-----	567	542	152	522	355	609	608	413	625	332	496	570	745	567	659	254	145	409	482	646	627	430	457	224	374	733	598	428	425	669	740	111	733	227	636	562	548
Apr. 12-----	---	270	279	508	188	599	573	564	152	608	492	643	682	177	628	575	262	232	628	271	583	687	330	217	578	700	298	135	483	611	716	572	713	361	402	638	209
Apr. 13-----	---	304	345	485	47	576	610	561	558	586	415	627	699	456	625	458	325	---	636	(425)	694	699	669	235	560	694	557	688	478	586	689	548	741	173	359	658	647
Apr. 14-----	721	493	204	506	206	491	492	570	570	426	278	648	697	169	568	294	397	---	650	---	723	691	531	542	574	351	264	639	434	612	683	333	732	347	375	531	625
Average-------	656	446	209	497	228	525	509	498	527	525	466	628	682	379	614	350	440	379	608	(474)	660	644	549	353	531	653	423	545	421	632	629	429	732	386	483	594	528
Apr. 15-----	697	422	324	353	284	390	552	596	586	355	575	580	688	308	459	189	495	---	653	677	605	722	603	578	582	578	577	625	362	467	514	---	729	97	---	620	647
Apr. 16-----	730	77	137	489	387	493	591	594	424	638	556	627	716	649	530	342	307	551	677	631	699	750	435	441	569	556	385	733	345	604	616	371	758	346	398	468	566
Apr. 17-----	737	382	133	475	365	391	649	602	595	513	169	587	722	322	619	292	272	211	655	721	705	737	689	698	562	603	515	714	---	595	534	249	766	444	365	643	644
Apr. 18-----	741	460	91	376	87	426	611	637	584	362	540	580	504	97	417	260	626	154	572	669	733	688	583	722	591	518	504	706	518	405	528	652	712	74	608	459	389
Apr. 19-----	619	539	250	504	---	621	578	580	371	590	394	649	771	678	394	593	678	225	652	623	687	602	271	688	593	552	349	453	599	697	740	652	754	663	622	515	561
Apr. 20-----	738	204	223	479	---	236	584	490	637	454	554	637	743	689	645	492	262	406	650	676	729	731	686	375	588	680	468	701	543	657	422	584	745	606	438	672	663
Apr. 21-----	---	561	522	461	480	239	644	470	596	432	542	590	432	652	454	173	684	324	650	688	628	640	598	636	602	470	648	692	604	595	355	310	758	495	574	479	663
Average-------	710	378	240	448	321	399	601	567	542	478	476	607	654	485	503	334	475	312	644	669	684	696	552	591	584	565	492	661	495	575	530	470	746	389	501	551	591
Apr. 22-----	587	518	628	448	547	559	529	339	359	240	479	609	408	290	---	586	605	551	563	446	(687)	575	---	452	563	625	83	473	89	667	659	624	787	637	533	549	468
Apr. 23-----	---	502	631	492	143	558	574	302	232	690	395	623	759	612	549	461	578	454	300	502	751	424	481	337	333	587	169	626	172	679	642	549	750	550	544	450	667
Apr. 24-----	722	369	241	514	314	510	672	642	417	593	---	612	748	421	658	536	407	249	519	701	762	356	381	252	565	635	239	380	395	620	657	585	776	533	365	364	652
Apr. 25-----	781	184	401	520	281	548	366	587	297	524	473	604	724	606	649	501	404	297	561	732	784	656	430	390	557	653	---	699	592	642	704	500	768	419	315	555	686
Apr. 26-----	628	601	576	513	494	519	828	671	650	641	171	---	736	427	---	298	650	555	322	695	759	524	493	716	378	639	588	520	626	670	669	276	670	179	485	639	498
Apr. 27-----	493	453	647	478	248	379	582	642	581	239	333	---	507	455	169	590	590	158	412	443	751	317	354	325	139	593	592	395	316	396	481	639	569	362	617	370	434
Apr. 28-----	745	298	652	533	541	327	566	468	330	111	595	---	118	692	150	550	420	627	607	488	547	197	465	318	576	745	716	452	317	309	410	575	782	516	662	298	428
Average-------	659	418	539	500	367	486	588	522	409	434	408	612	571	500	435	503	522	413	469	572	(720)	436	434	399	444	640	398	507	358	569	603	535	729	457	503	461	548
Apr. 29-----	463	84	372	454	225	585	534	441	454	692	512	---	794	700	670	290	99	514	701	75	726	426	237	305	601	635	533	472	698	698	631	71	778	676	111	433	298
Apr. 30-----	---	591	168	275	481	142	596	273	723	697	164	559	684	704	461	129	364	544	659	610	741	764	738	755	608	488	705	771	680	400	216	137	793	129	439	759	765
May 1-----	711	586	455	390	304	621	714	527	592	553	130	(583)	390	542	477	525	745	419	412	751	(763)	693	707	680	(555)	489	600	772	653	557	648	690	780	---	634	655	657
May 2-----	634	577	372	287	442	463	864	404	---	394	97	626	486	---	241	546	736	555	582	739	705	374	477	751	616	419	239	630	302	740	577	693	757	---	522	388	482
May 3-----	614	538	544	294	286	618	895	630	139	424	336	627	581	675	497	615	712	198	449	252	763	533	386	521	462	279	500	545	199	720	752	685	564	655	453	584	517
May 4-----	402	436	631	408	356	578	930	416	347	478	396	601	462	520	657	612	247	339	705	493	689	248	142	299	532	417	327	283	164	731	716	574	787	746	253	278	360
May 5-----	404	245	162	179	614	390	960	403	601	671	467	641	767	637	630	597	489	602	692	489	709	810	320	468	631	584	228	319	207	585	513	450	817	695	334	250	217
Average-------	538	437	386	327	387	485	785	442	476	558	300	(606)	595	630	519	473	485	453	600	487	(728)	550	430	540	(572)	473	447	542	415	633	579	472	754	580	392	478	471

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Las Vegas, Nev.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.	Matanuska, Alaska	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City,Okla.	Page, Ariz.	Portland, Me.	Pullman, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	Salt Lake City,Utah	San Antonio, Tex	Santa Maria, Calif.	S. Ste.Marie, Mich.	Sayville, N. Y.	Seattle-Tacoma, Wash.	Shreveport, La.	Sopkane, Wash.	State College, Pa.	Tampa, Fla.	Tucson, Ariz.	Washington, D.C. (Ob & Test Dev Ctr)
Apr. 1-----	617	78	224	592	617	167	61	387	485	276	614	609	583	251	502	66	565	538	544	311	410	377	644	159	320	447	665	295	552	293	450	424	264	559	663	511
Apr. 2-----	641	175	612	584	608	242	128	287	732	508	548	130	98	412	62	105	140	573	667	604	405	608	661	70	611	142	410	118	207	402	473	366	340	568	695	425
Apr. 3-----	635	141	480	586	636	101	575	370	797	464	551	552	94	194	39	452	66	653	663	198	555	558	642	429	625	405	---	181	85	480	440	549	50	341	693	49
Apr. 4-----	633	338	659	579	615	341	551	396	601	542	435	636	354	191	420	312	163	626	668	416	559	528	654	412	620	481	---	255	280	466	603	520	185	72	685	399
Apr. 5-----	637	417	661	573	608	684	585	162	774	313	614	648	362	68	113	602	384	633	667	66	432	511	621	622	619	475	---	561	93	348	633	308	340	652	684	192
Apr. 6-----	569	531	633	539	610	645	480	356	604	240	703	660	556	370	436	507	572	615	534	487	577	484	623	582	607	483	---	479	416	517	628	546	507	685	643	588
Apr. 7-----	643	703	601	607	629	654	368	201	668	549	671	606	615	286	316	607	568	615	650	622	572	618	665	538	252	476	---	275	267	511	617	688	233	654	629	614
Average-------	625	341	553	580	618	405	392	308	666	413	591	549	380	253	270	379	351	608	628	386	501	526	644	402	522	416	---	309	271	431	549	486	274	504	670	397
Apr. 8-----	653	709	118	443	457	327	589	270	---	503	504	579	510	209	269	638	475	379	660	305	482	635	606	444	610	436	---	333	262	266	519	554	331	657	631	522
Apr. 9-----	669	447	648	235	499	427	189	337	---	157	623	629	688	271	454	650	648	617	659	97	186	607	616	654	651	231	---	606	379	464	572	471	473	654	695	628
Apr. 10-----	671	758	661	428	415	671	486	451	733	474	600	488	694	557	501	574	666	620	659	637	617	448	527	619	620	272	---	603	570	517	637	---	402	674	687	624
Apr. 11-----	338	562	639	504	249	532	571	320	585	491	644	622	593	625	598	628	609	261	---	639	148	616	470	584	380	200	---	38	609	329	633	196	582	673	518	618
Apr. 12-----	680	565	635	642	641	594	209	452	818	369	584	432	605	451	454	244	540	226	(434)	470	465	285	666	387	575	97	---	437	459	196	589	438	648	652	673	612
Apr. 13-----	677	692	353	639	667	359	151	---	842	447	431	620	614	471	404	326	602	92	710	600	277	626	684	386	658	98	---	42	458	137	406	250	464	581	717	603
Apr. 14-----	587	586	305	578	598	335	428	479	590	343	558	---	620	456	423	602	599	518	605	425	534	572	606	(593)	490	177	---	581	428	240	314	506	489	581	680	556
Average-------	611	617	480	495	504	463	375	385	714	398	563	562	618	434	443	523	591	388	(621)	453	387	541	596	(524)	569	216	---	377	452	307	524	402	484	639	657	595
Apr. 15-----	663	434	421	618	629	226	322	---	371	550	---	484	365	468	402	566	473	558	671	384	443	614	646	358	648	352	---	627	471	361	279	395	356	636	515	483
Apr. 16-----	702	624	294	641	668	149	337	---	451	483	616	563	536	284	290	191	599	279	715	504	570	162	673	147	579	305	---	497	341	515	196	582	461	491	730	544
Apr. 17-----	717	314	574	643	666	84	590	---	586	289	649	674	232	366	399	506	271	659	734	151	241	670	673	559	680	149	---	200	413	346	451	210	497	565	723	524
Apr. 18-----	625	764	734	637	656	676	599	---	822	256	443	675	696	149	210	598	636	677	703	173	353	666	(665)	363	379	531	---	725	200	187	712	373	322	617	717	326
Apr. 19-----	678	752	698	611	653	630	569	---	848	415	423	648	709	657	680	586	667	658	704	692	543	432	670	470	279	312	---	447	619	211	685	507	628	530	652	590
Apr. 20-----	684	683	532	591	645	364	417	---	496	377	405	642	618	658	630	435	538	557	688	229	370	675	655	155	696	426	---	358	639	423	464	453	600	473	(725)	633
Apr. 21-----	609	295	641	427	513	661	627	---	739	248	530	515	501	599	560	623	176	675	663	525	412	660	569	621	534	363	---	168	590	508	596	344	496	393	662	603
Average-------	668	552	556	595	633	399	494	---	616	374	511	600	522	454	453	501	480	581	697	380	419	554	(650)	382	542	348	---	432	467	364	483	409	480	529	(675)	529
Apr. 22-----	647	744	557	627	538	611	531	---	838	516	400	539	666	563	581	565	562	453	607	358	145	553	427	415	382	308	---	436	597	217	594	300	631	628	721	614
Apr. 23-----	574	681	629	652	702	626	393	219	853	546	227	445	619	108	522	579	579	292	535	160	585	(488)	362	346	155	285	---	434	470	318	519	410	580	454	641	614
Apr. 24-----	685	706	522	696	(671)	454	606	44	861	575	154	679	511	192	416	500	511	524	352	127	242	188	694	146	321	244	---	114	297	377	363	393	569	547	768	547
Apr. 25-----	723	630	374	661	698	107	516	172	840	309	354	712	526	455	549	437	456	535	733	258	322	662	742	84	633	335	---	613	517	525	449	331	480	417	771	617
Apr. 26-----	390	286	226	470	596	717	660	349	689	364	359	442	292	350	557	673	429	706	---	593	629	341	631	366	633	400	---	128	559	(616)	411	662	477	527	739	460
Apr. 27-----	325	748	576	424	241	734	476	351	---	329	625	607	628	159	186	407	233	273	237	93	659	216	401	510	359	337	---	470	256	600	537	708	363	565	741	338
Apr. 28-----	657	799	596	671	661	575	57	179	---	457	600	546	694	383	557	205	694	---	489	613	492	120	612	276	365	289	---	713	533	540	606	714	562	596	715	273
Average-------	572	656	497	600	(587)	546	463	219	816	442	388	567	562	316	481	481	495	464	492	315	439	(367)	553	306	407	314	---	415	461	(456)	497	502	523	533	728	495
Apr. 29-----	740	480	97	654	629	73	38	231	---	611	575	700	478	642	682	94	646	---	548	698	708	401	728	369	637	332	---	264	675	260	97	703	641	514	730	651
Apr. 30-----	765	226	655	676	705	147	643	548	---	338	596	713	365	649	392	668	132	---	707	724	679	750	(743)	684	752	502	---	51	93	568	642	633	262	631	760	428
May 1-----	762	701	729	697	721	705	690	520	---	242	600	378	748	153	85	650	633	---	763	170	393	635	747	728	706	411	---	660	50	549	724	505	277	553	753	277
May 2-----	646	811	536	608	633	665	682	366	---	633	548	726	638	690	760	594	617	---	567	584	311	635	712	413	381	403	---	600	721	328	690	343	674	570	742	712
May 3-----	663	798	635	381	218	626	466	572	708	210	584	633	660	658	721	---	671	---	663	686	559	119	182	378	510	142	---	221	653	274	685	347	709	344	646	672
May 4-----	434	704	506	472	425	617	397	241	830	637	406	---	653	666	695	417	665	---	363	627	---	196	446	239	372	463	---	439	702	228	368	567	732	297	447	---
May 5-----	763	627	415	693	721	145	400	449	845	630	584	---	366	688	754	180	558	---	616	682	606	242	768	303	644	451	747	301	683	528	492	551	725	506	760	690
Average	682	621	511	597	579	425	474	418	---	471	556	630	558	592	584	434	560	---	604	596	543	425	(618)	445	572	386	---	362	511	391	528	521	574	488	692	572

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

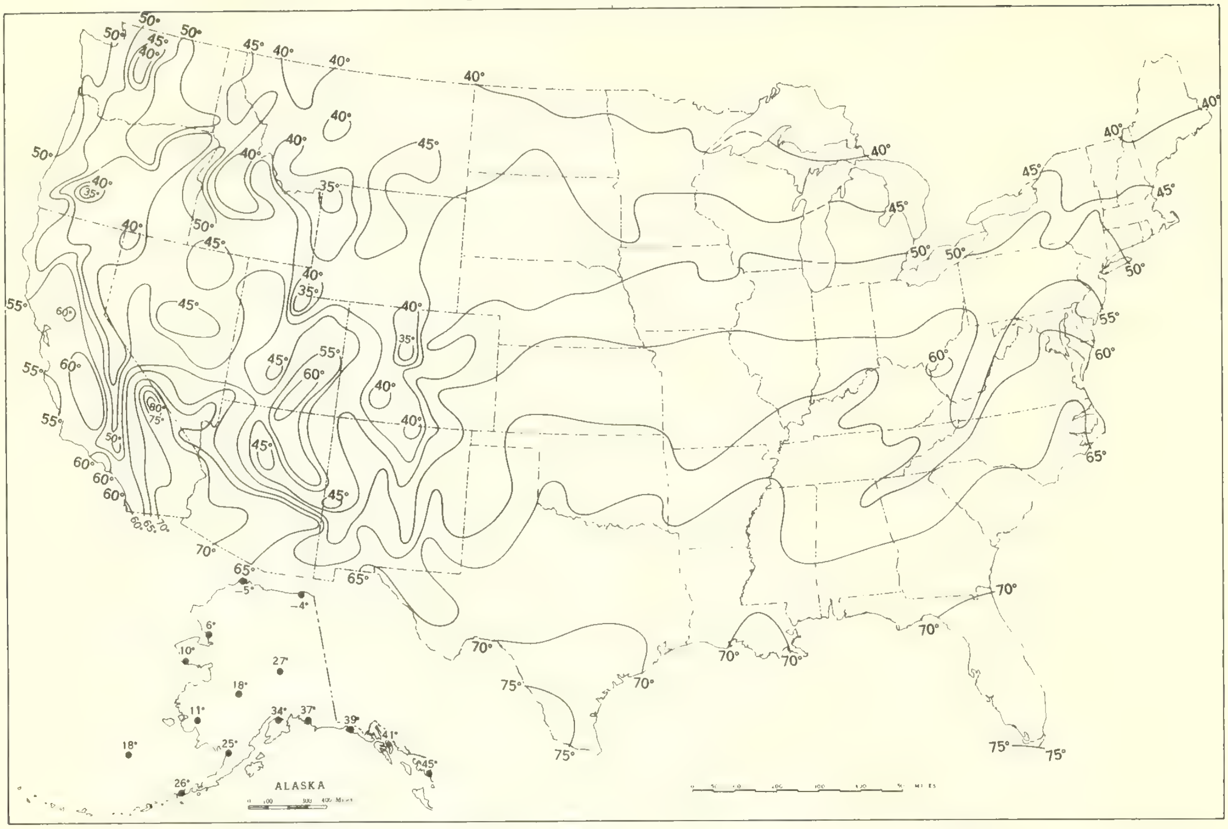
APRIL 1960

Station	Day of month																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bismarck, N. Dak.	---	430	416	407	363	413	430	390	341	343	372	---	373	341	381	449	427	397	---	385	366	---	---	320	---	---	---	---	393	398	
Caribou, Maine	---	360	---	---	---	---	---	459	---	---	446	---	---	---	---	344	---	---	426	436	402	---	420	382	370	371	341	382	419	406	
Fort Worth, Texas	366	---	407	373	337	332	331	---	345	364	---	---	---	365	311	289	323	317	317	335	346	---	---	---	---	346	---	350	---	330	
Green Bay, Wis.	---	402	---	---	364	---	421	---	394	351	340	338	---	341	316	332	---	378	376	---	372	321	329	---	---	314	341	432	---	---	
Silver Hill, Md.	377	372	---	297	---	460	419	436	478	480	401	390	381	379	387	365	345	---	414	390	389	379	372	365	359	363	358	384*	414	384	

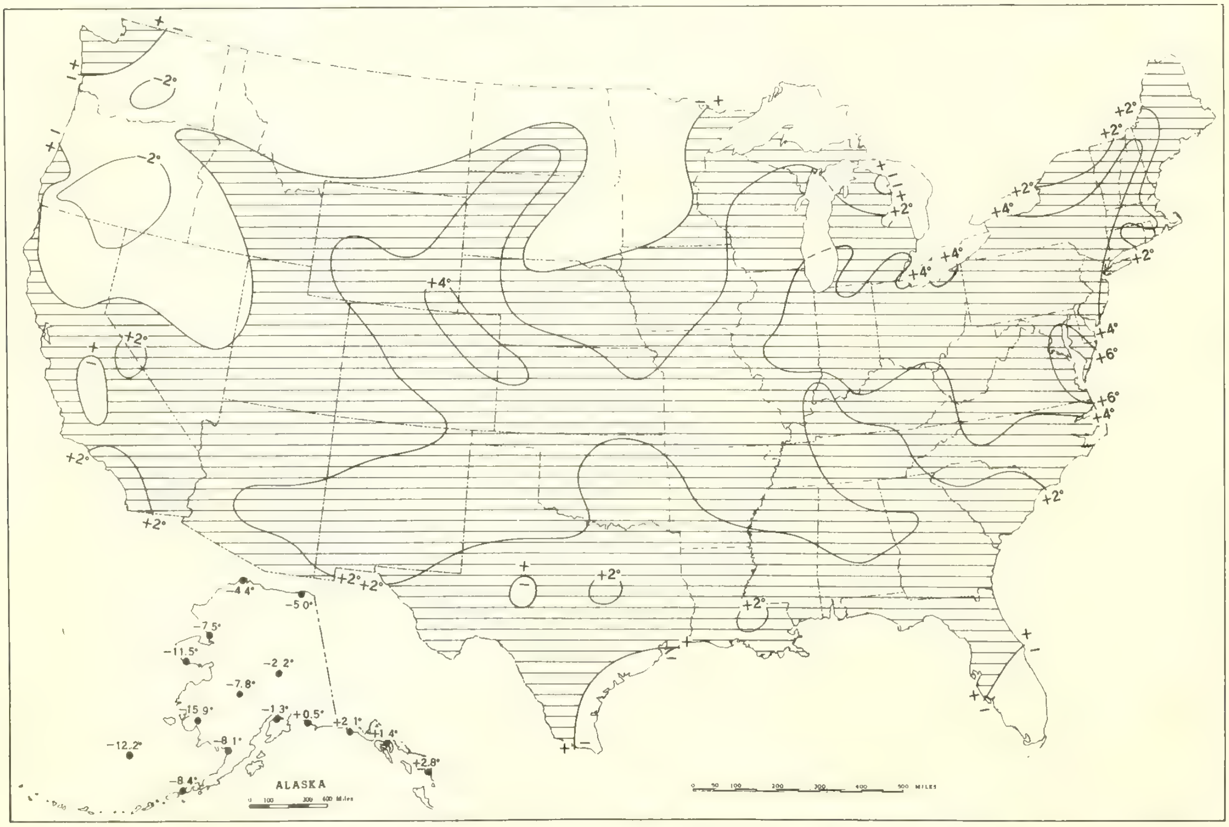
The spectrophotometer measures the total amount of ozone in the atmosphere, i.e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observations can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations; therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational procedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer," Annals of the International Geophysical Year, Volume V, Pergamon Press, 1957.

Chart I. A. Average Temperature (°F.) at Surface, April 1960.



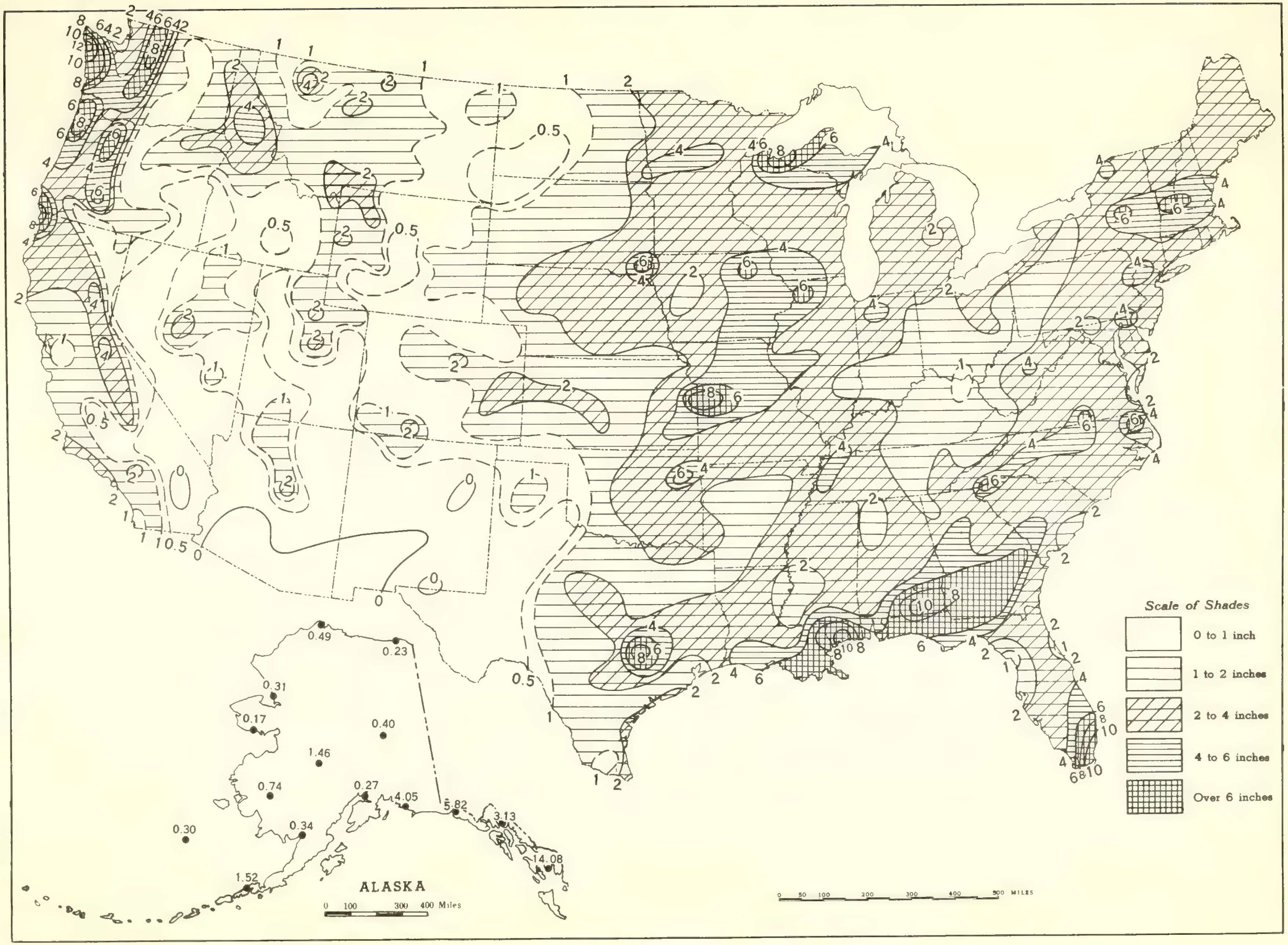
B. Departure of Average Temperature from Normal (°F.), April 1960.



A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

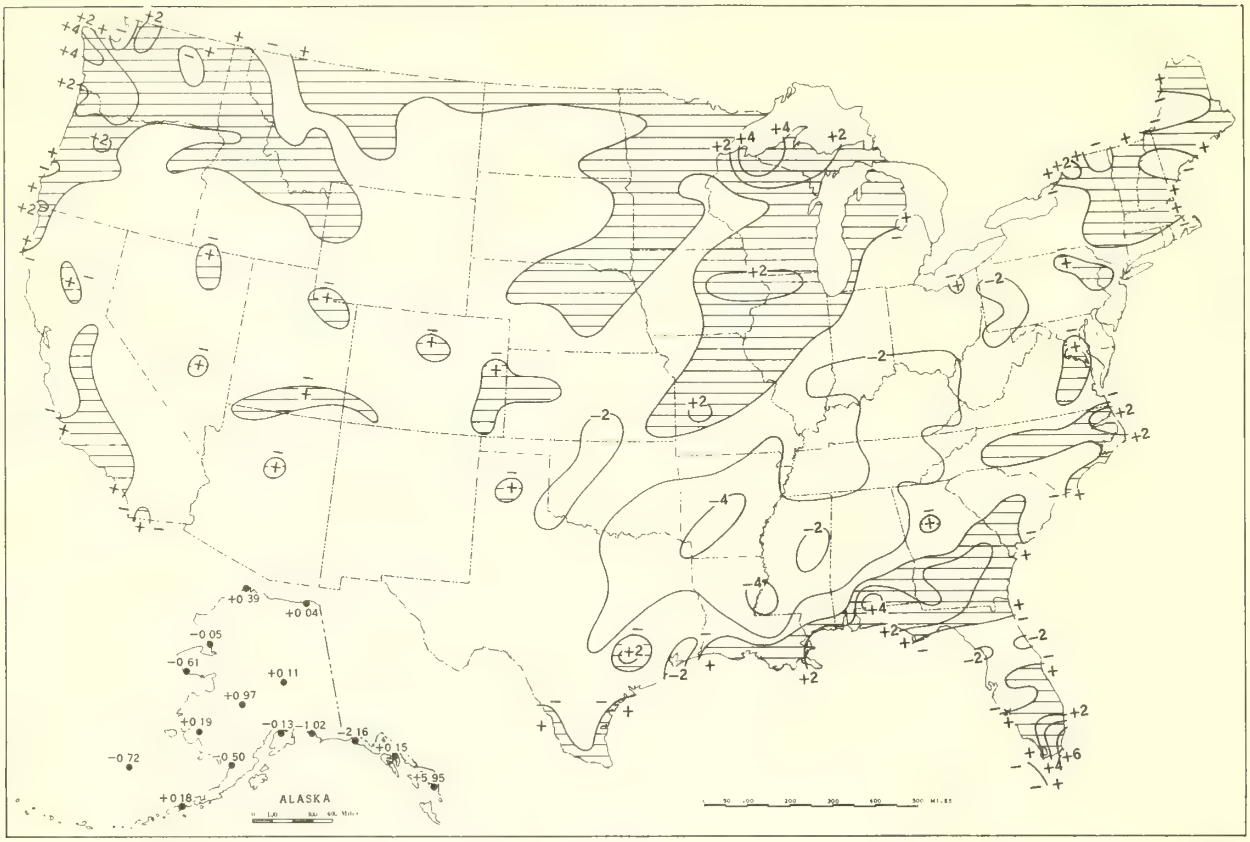
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), April 1960.

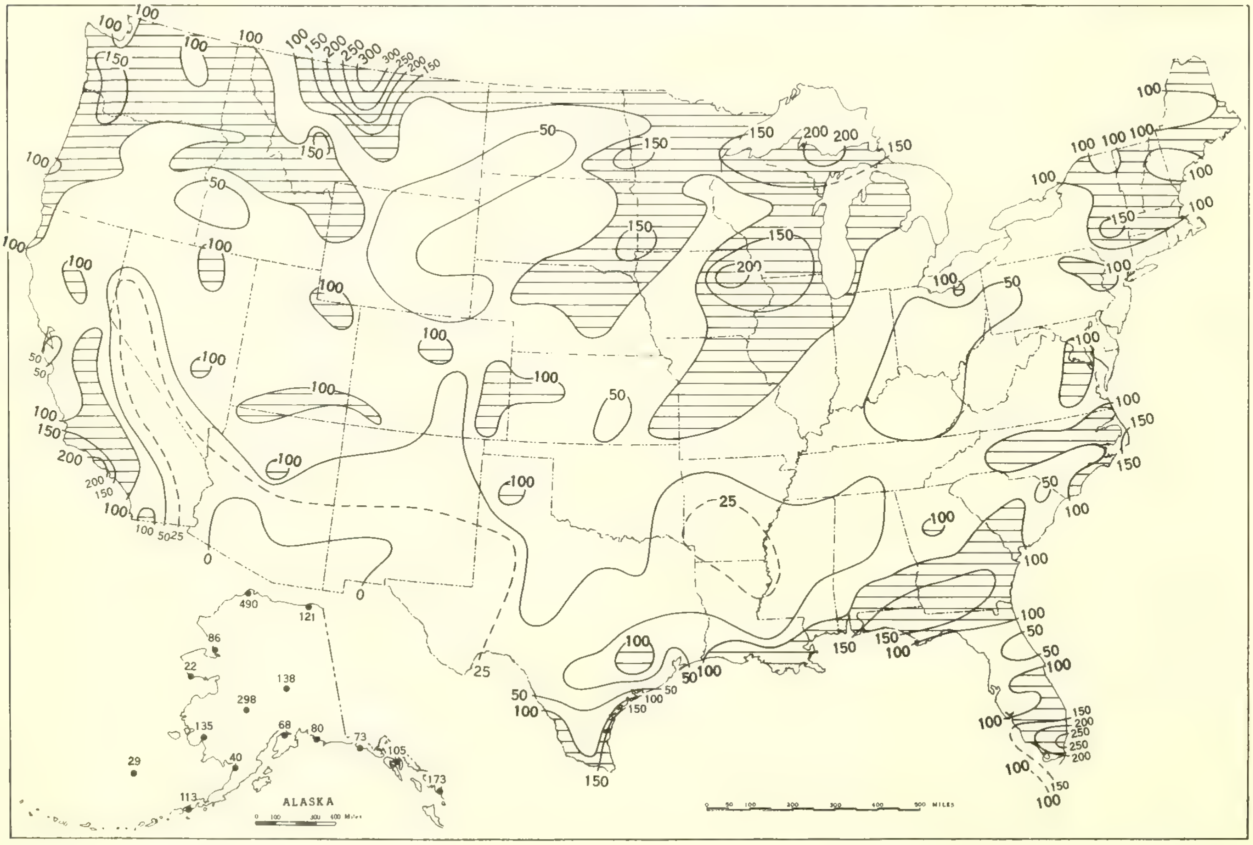


Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), April 1960.

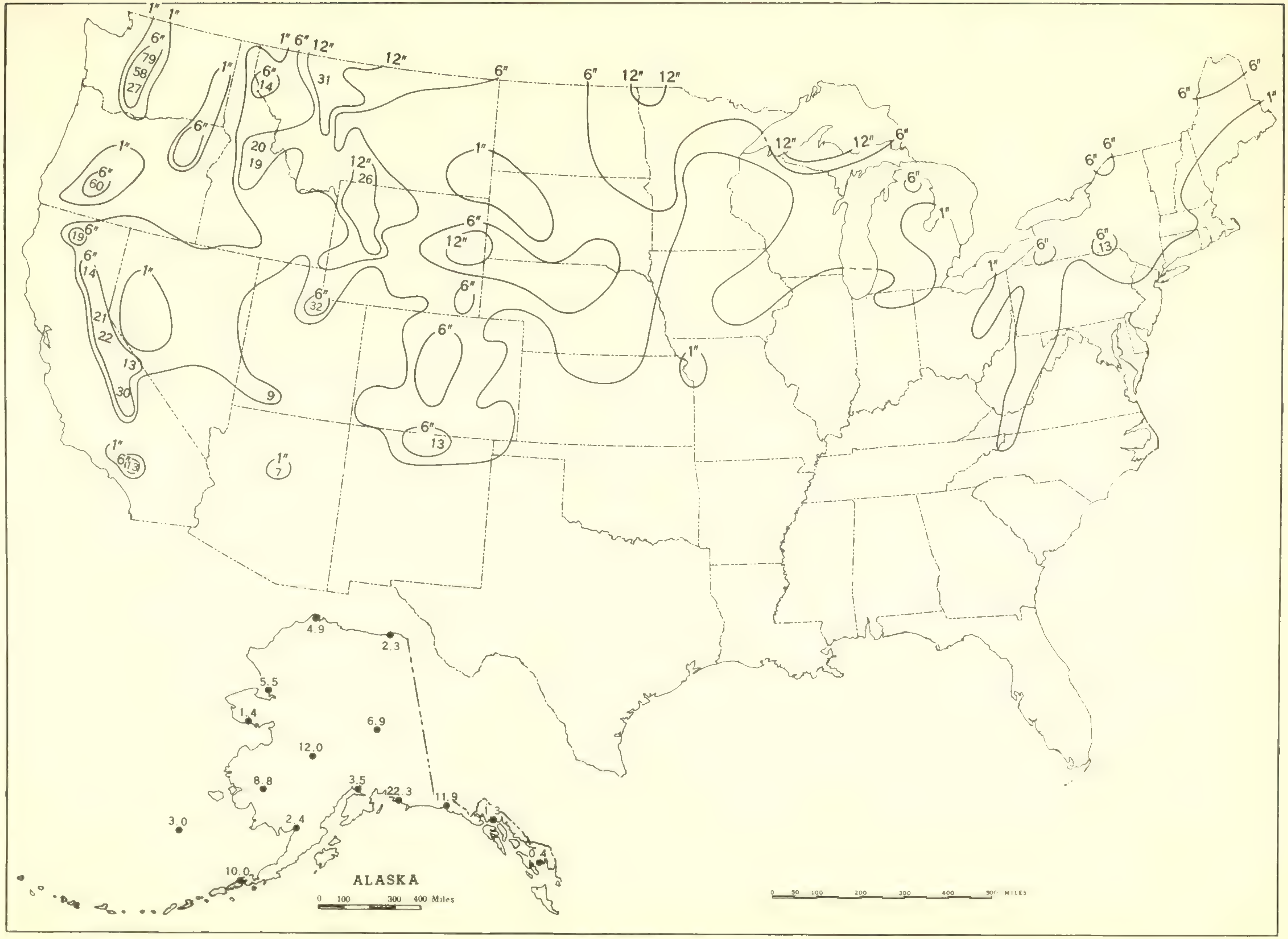


B. Percentage of Normal Precipitation, April 1960.



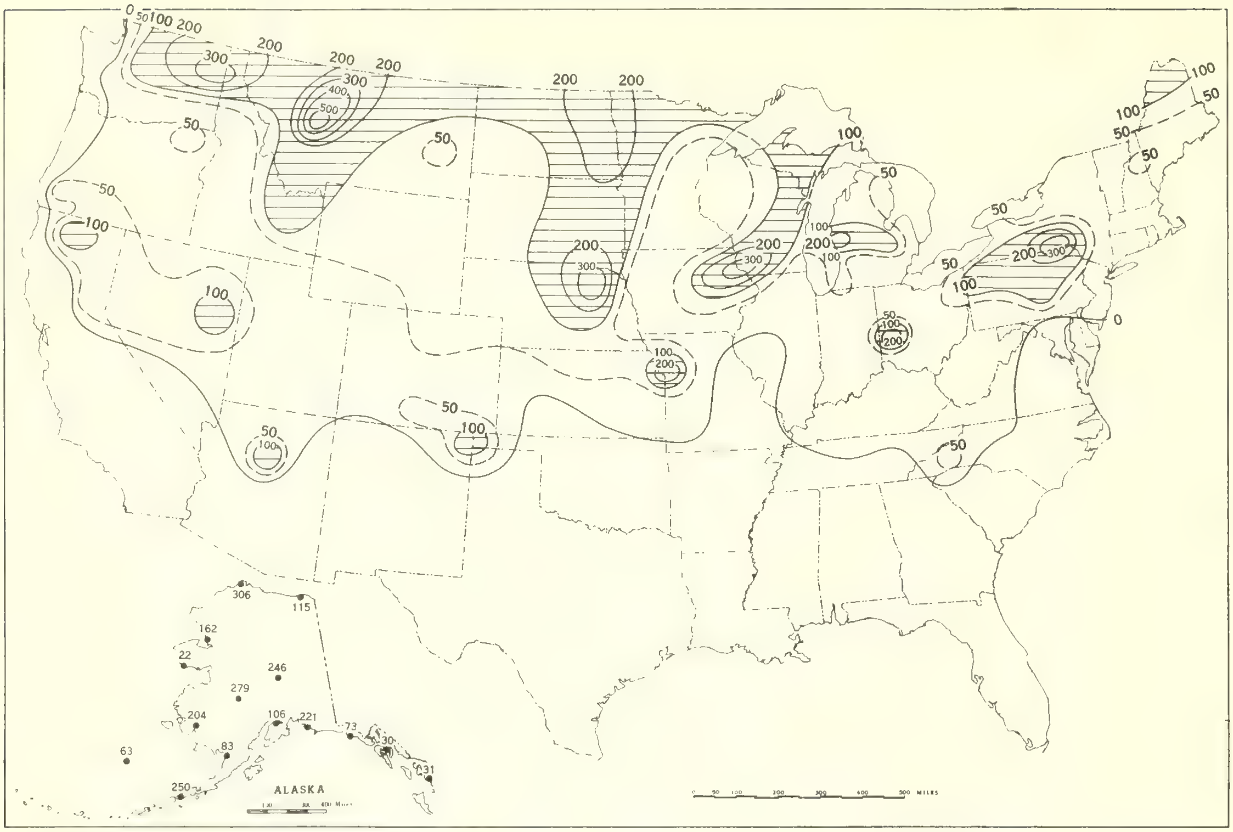
Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart IV. Total Snowfall (Inches), April 1960.

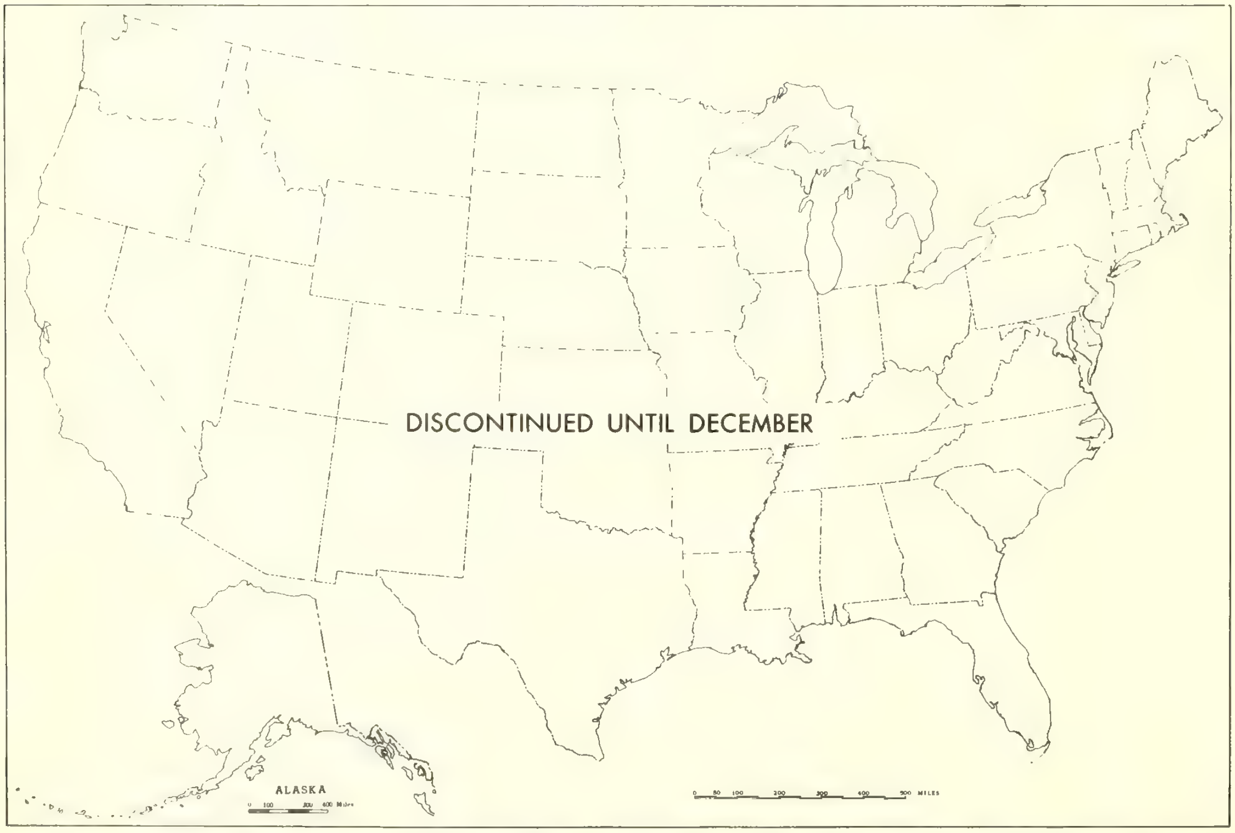


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, April 1960.

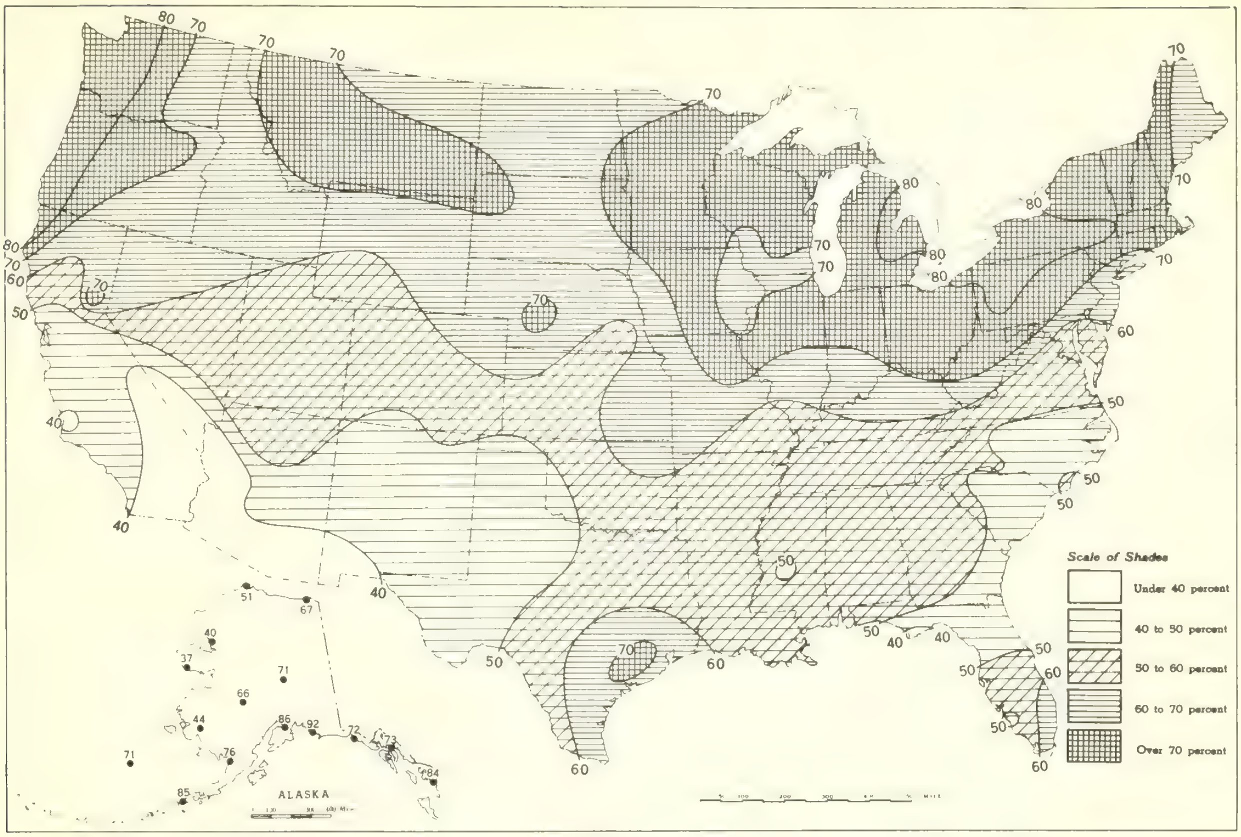


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., April 1960.

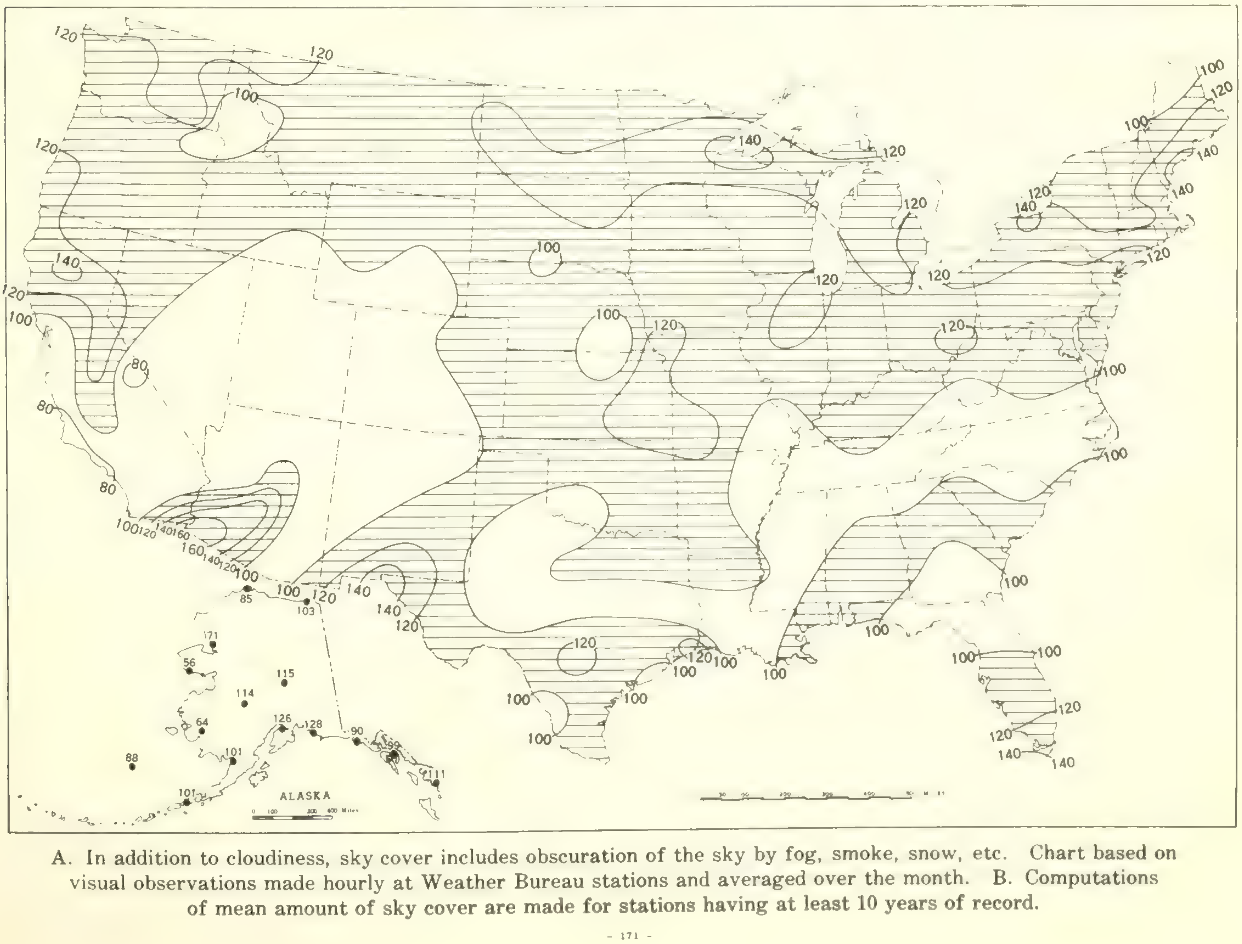


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a.m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, April 1960.

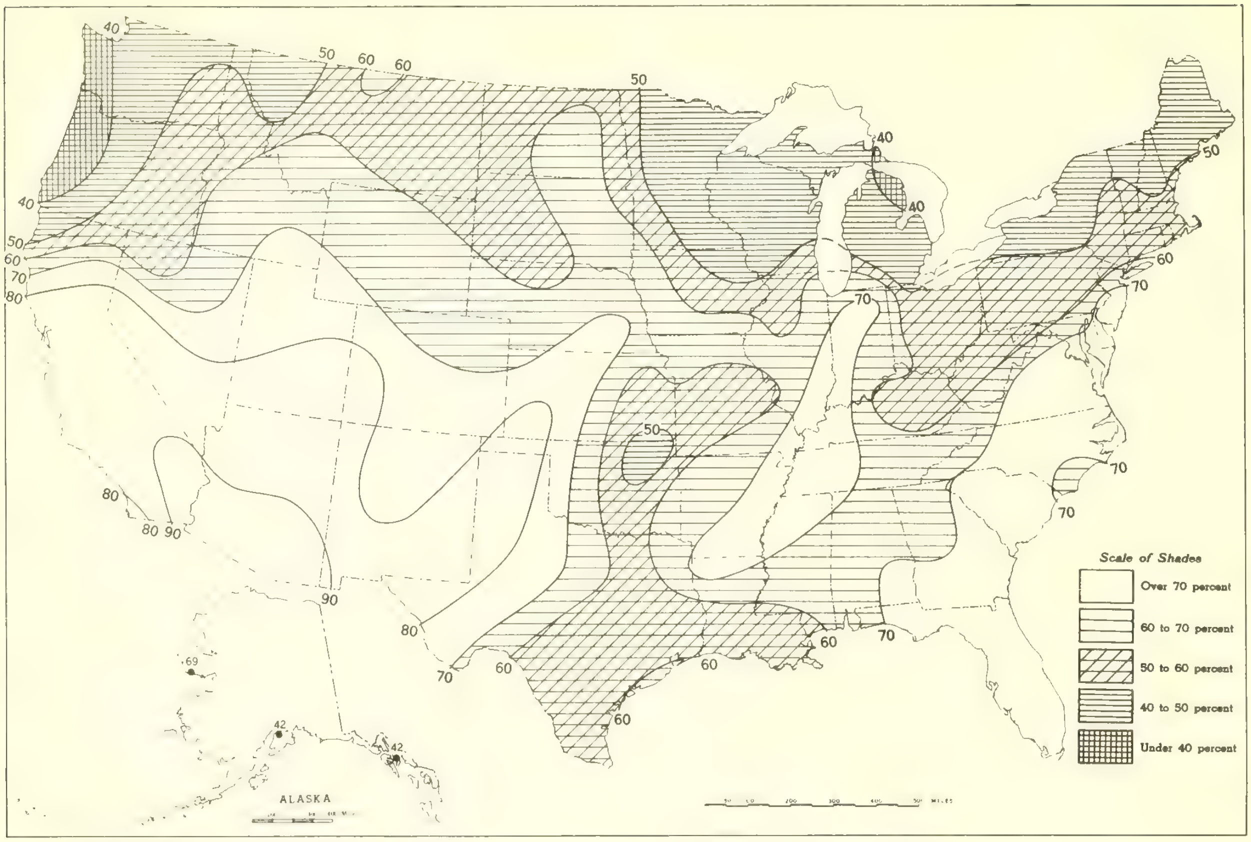


B. Percentage of Mean Monthly Sky Cover Between Sunrise and Sunset, April 1960.

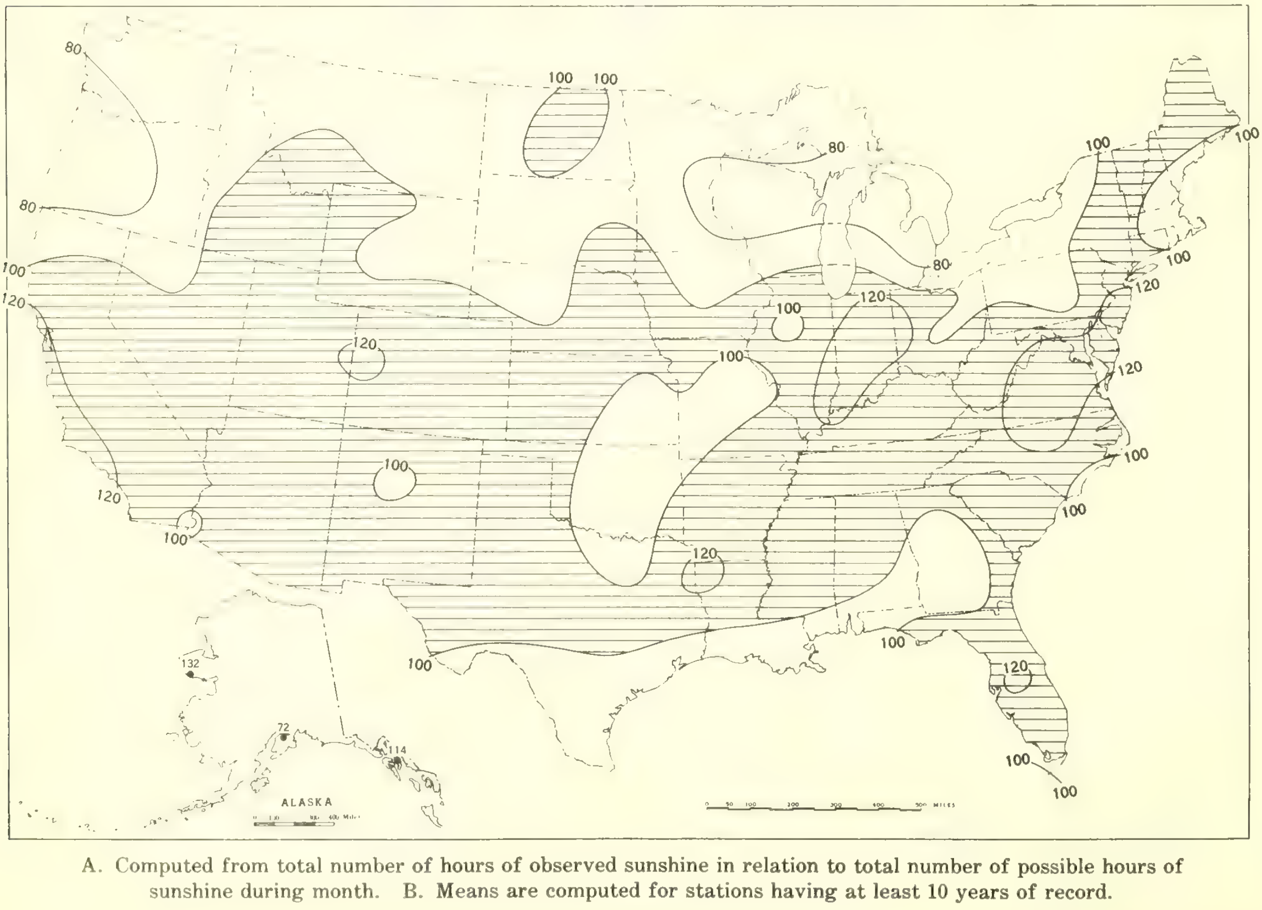


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of mean amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, April 1960.

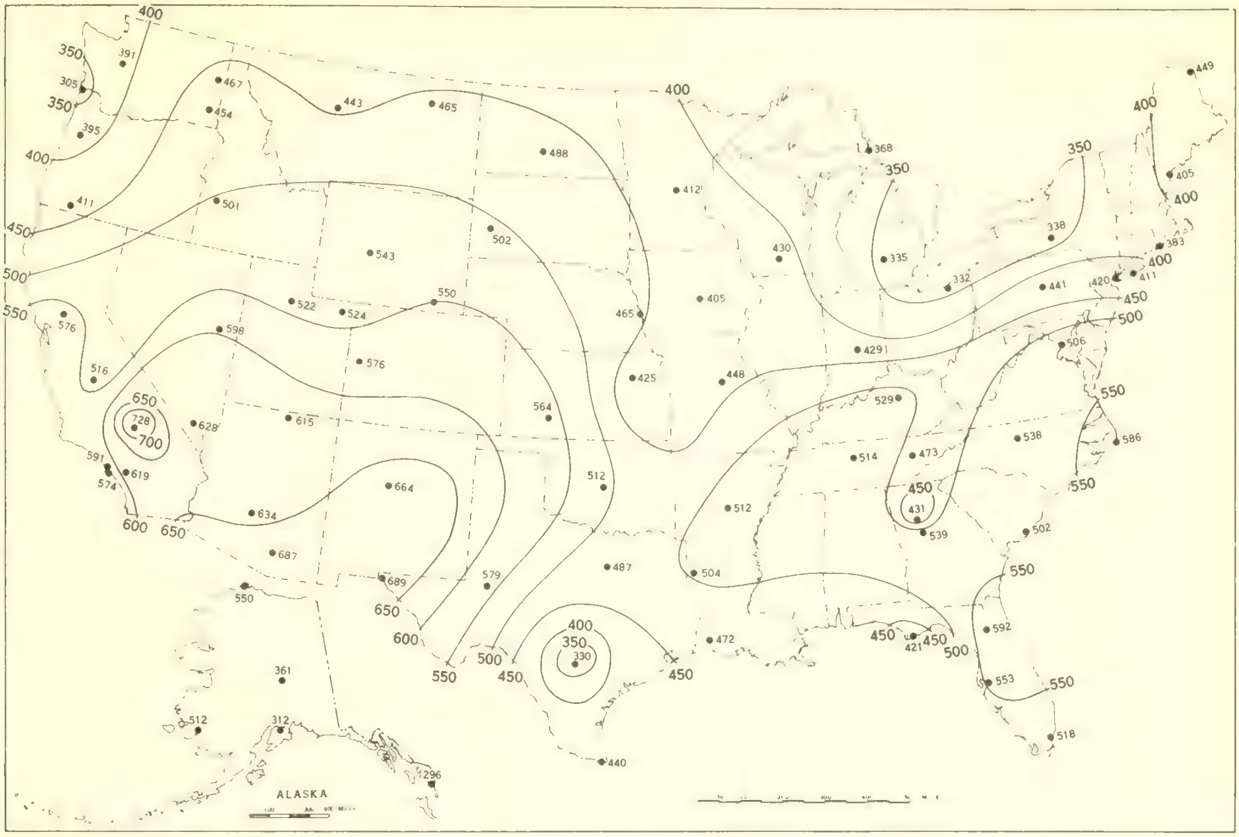


B. Percentage of Mean Monthly Sunshine, April 1960.

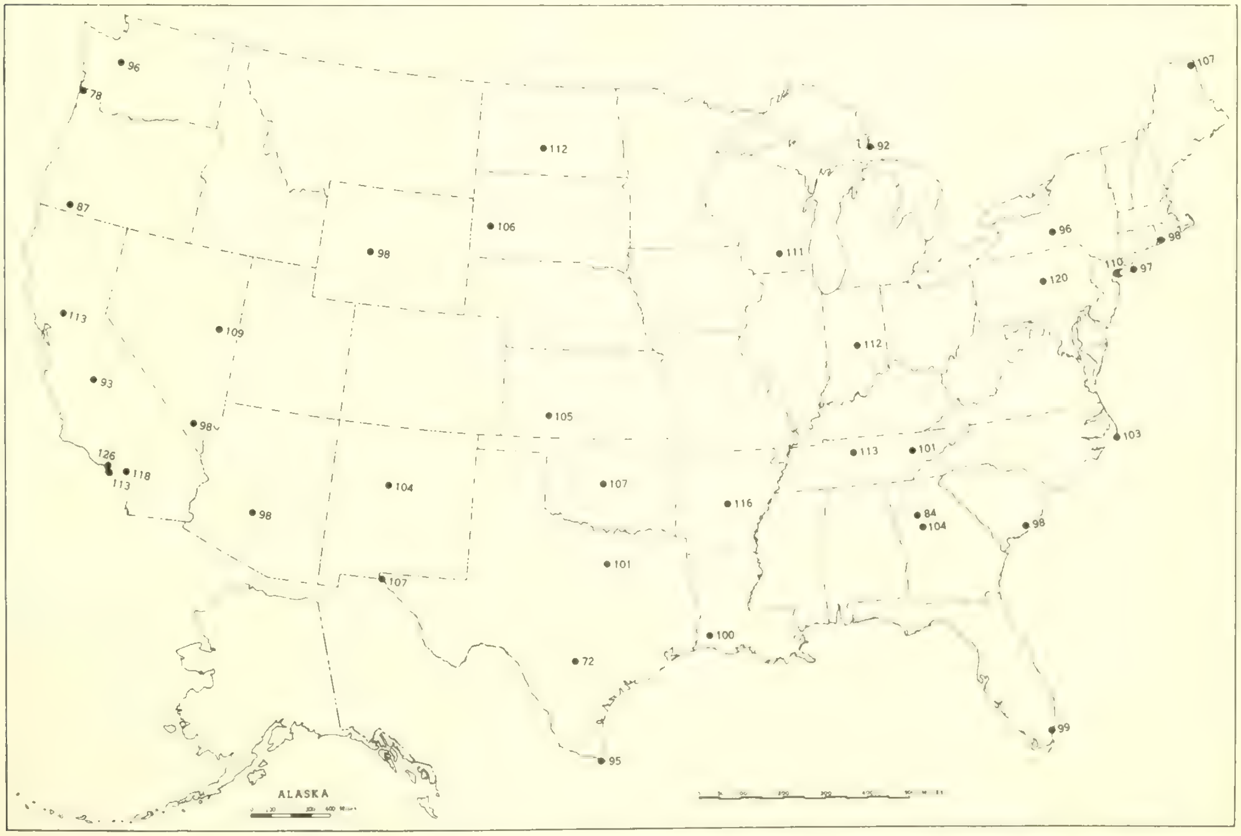


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, April 1960.



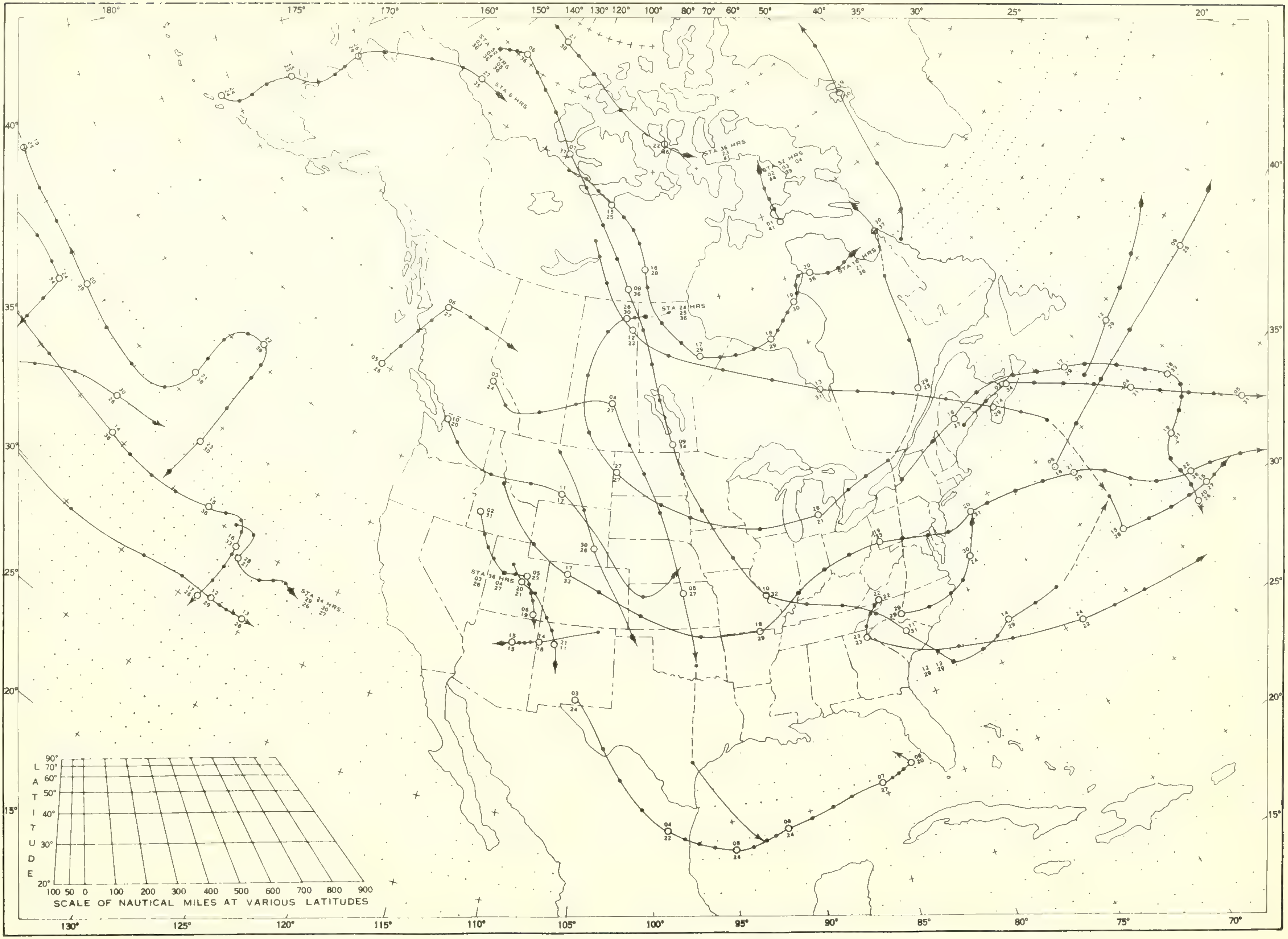
B. Percentage of Mean Daily Solar Radiation, April 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

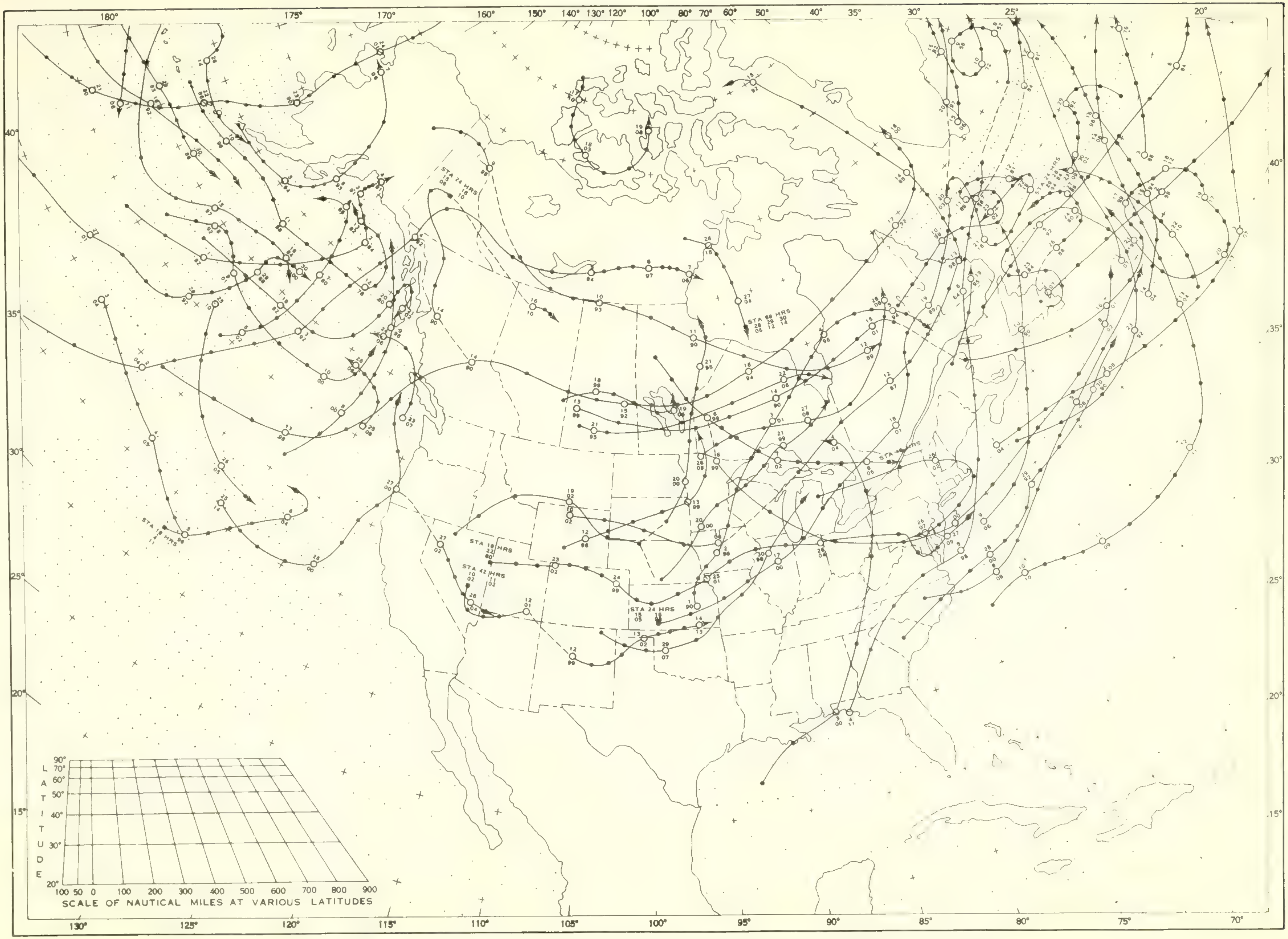
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, April 1960.



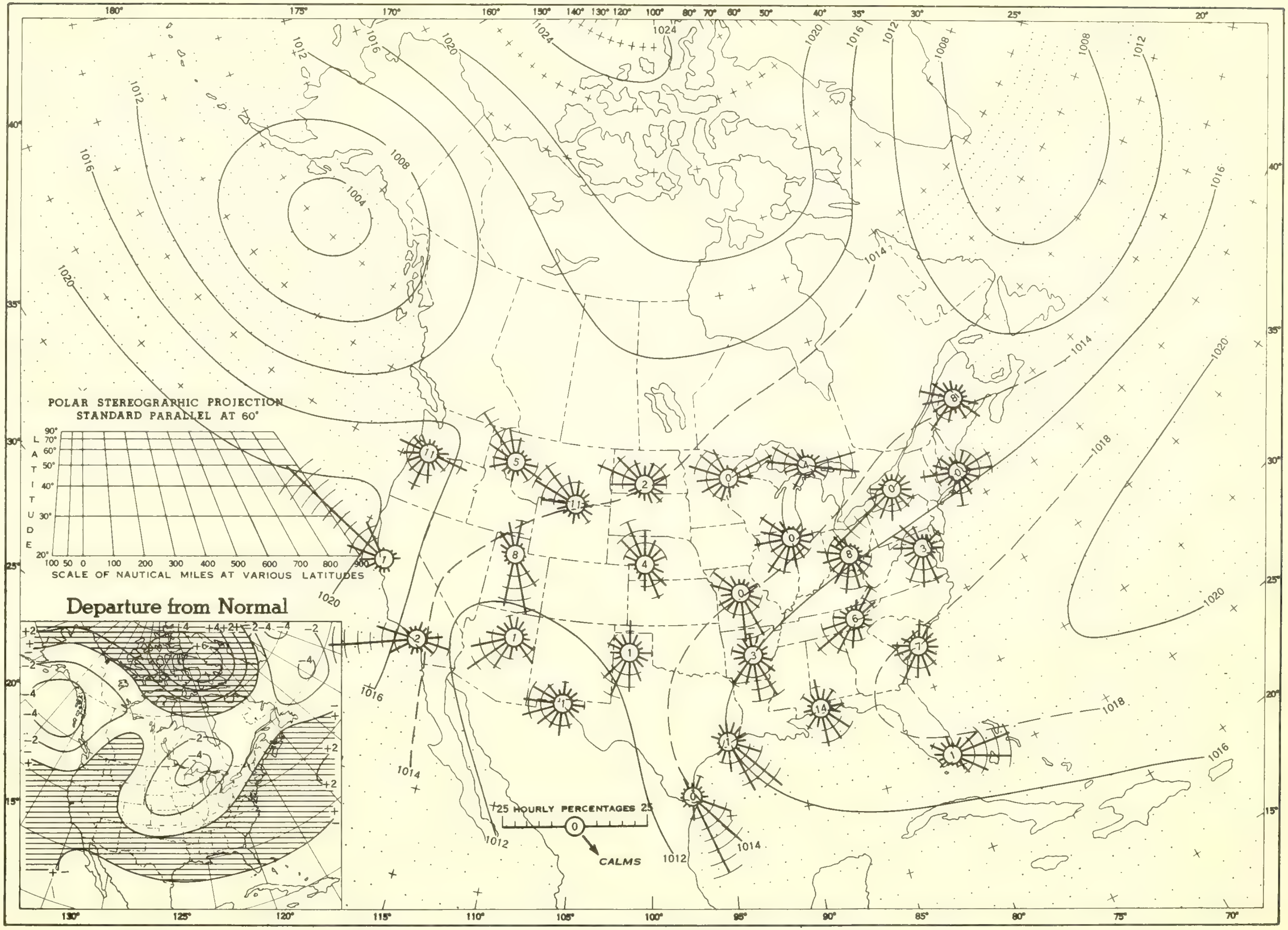
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, April 1960.



Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

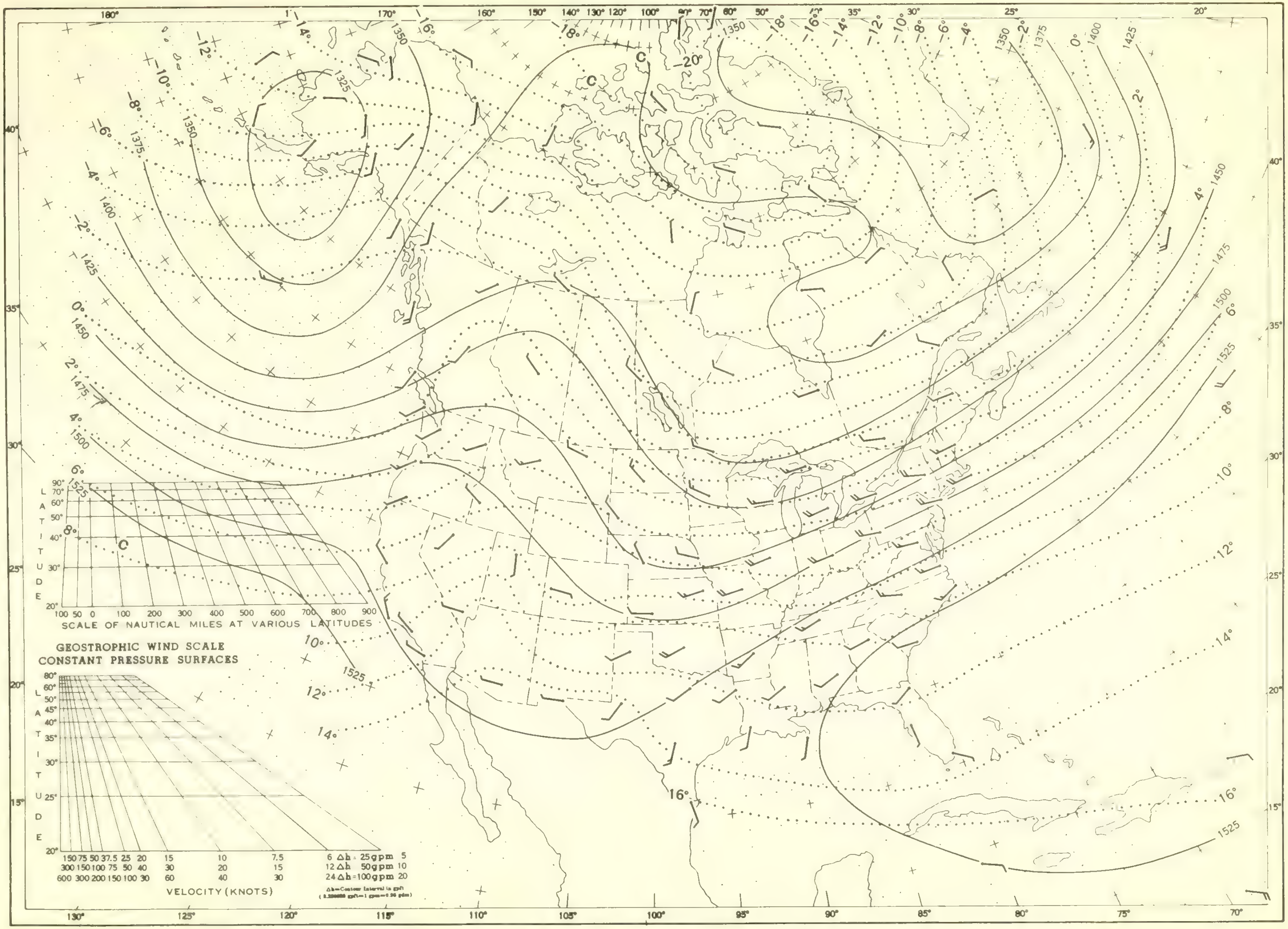
Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, April 1960. Inset: Departure of Average Pressure (mb.) from Normal, April 1960.



Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the **Historical Weather Maps** (1899-1939) for the 20 years of most complete data coverage prior to 1940.

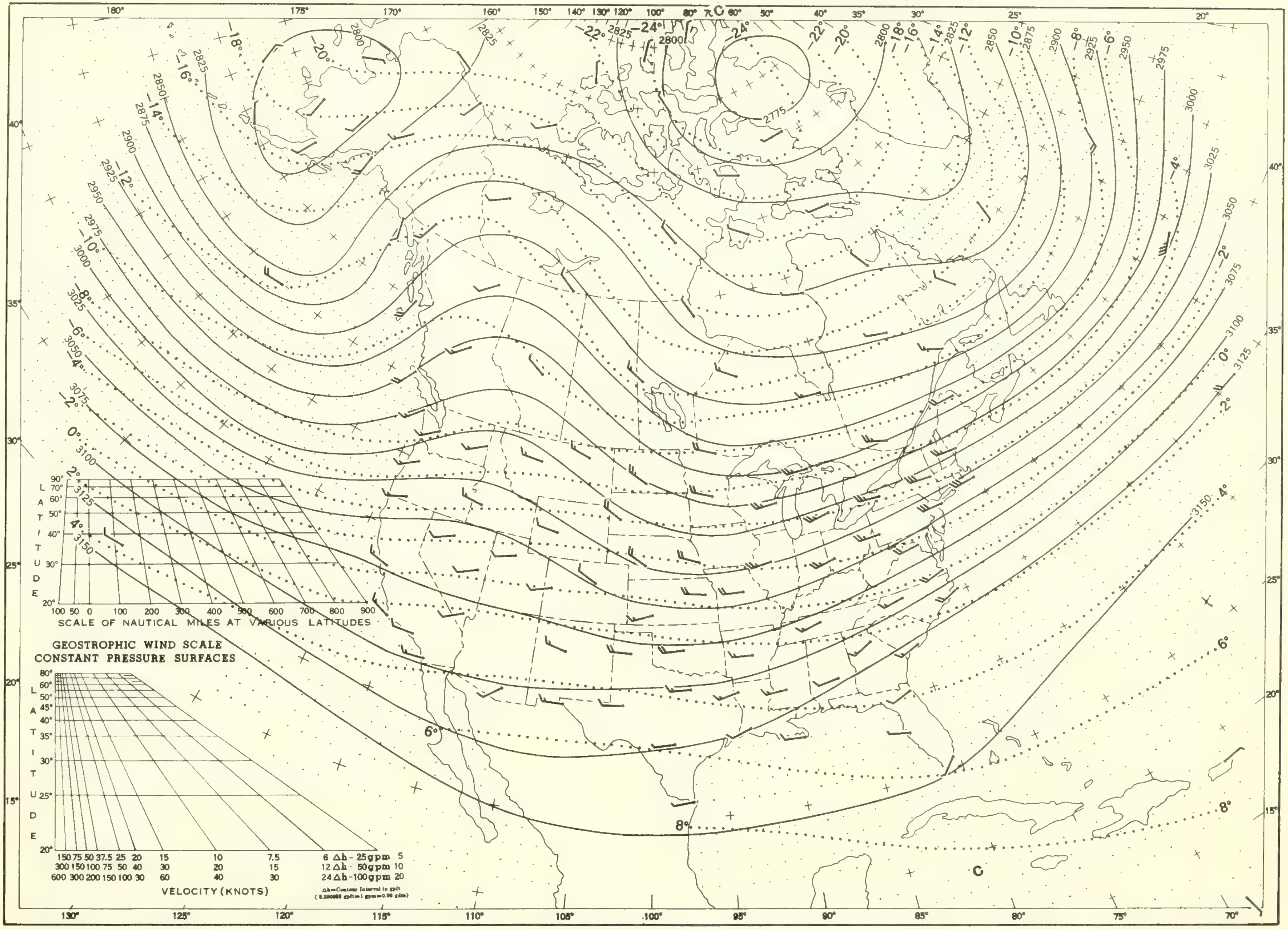
Chart XII. 850 mb. Surface, 1200 GMT, April 1960 Average Height and Temperature and Resultant Winds

Chart XII. 850-mb. Surface, 1200 GMT, April 1960. Average Height and Temperature, and Resultant Winds.



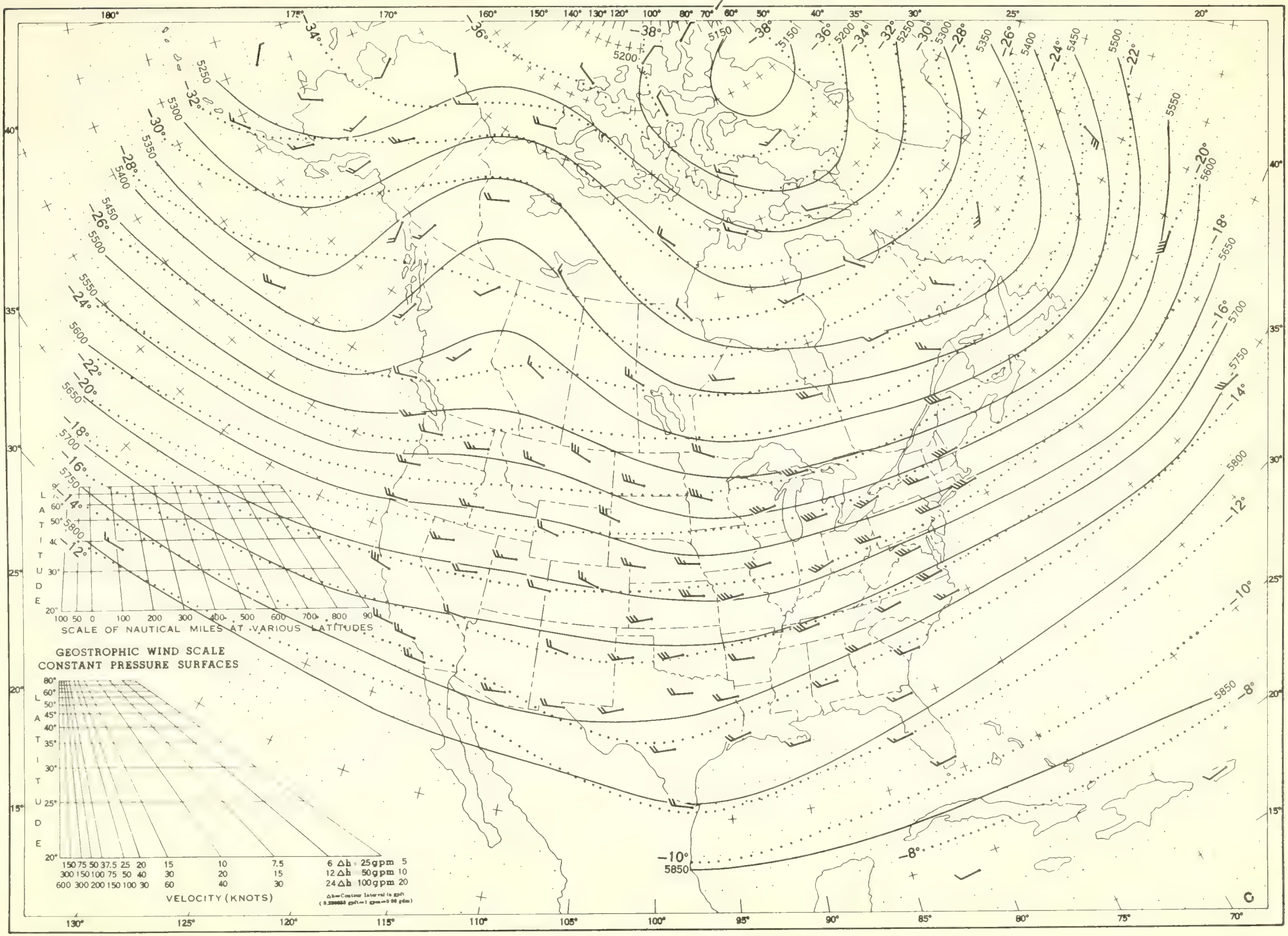
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, April 1960. Average Height and Temperature, and Resultant Winds.



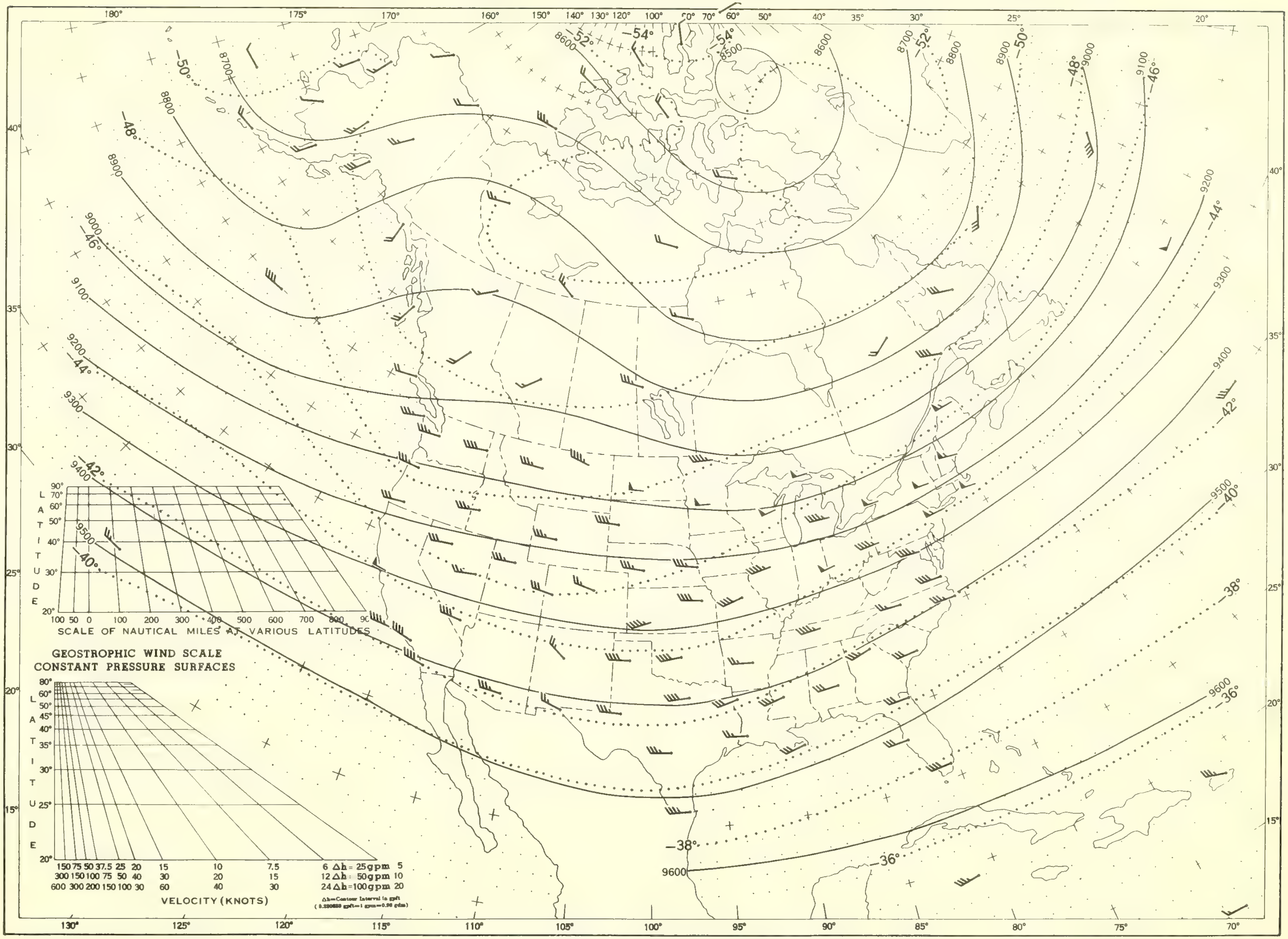
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, April 1960. Average Height and Temperature, and Resultant Winds.



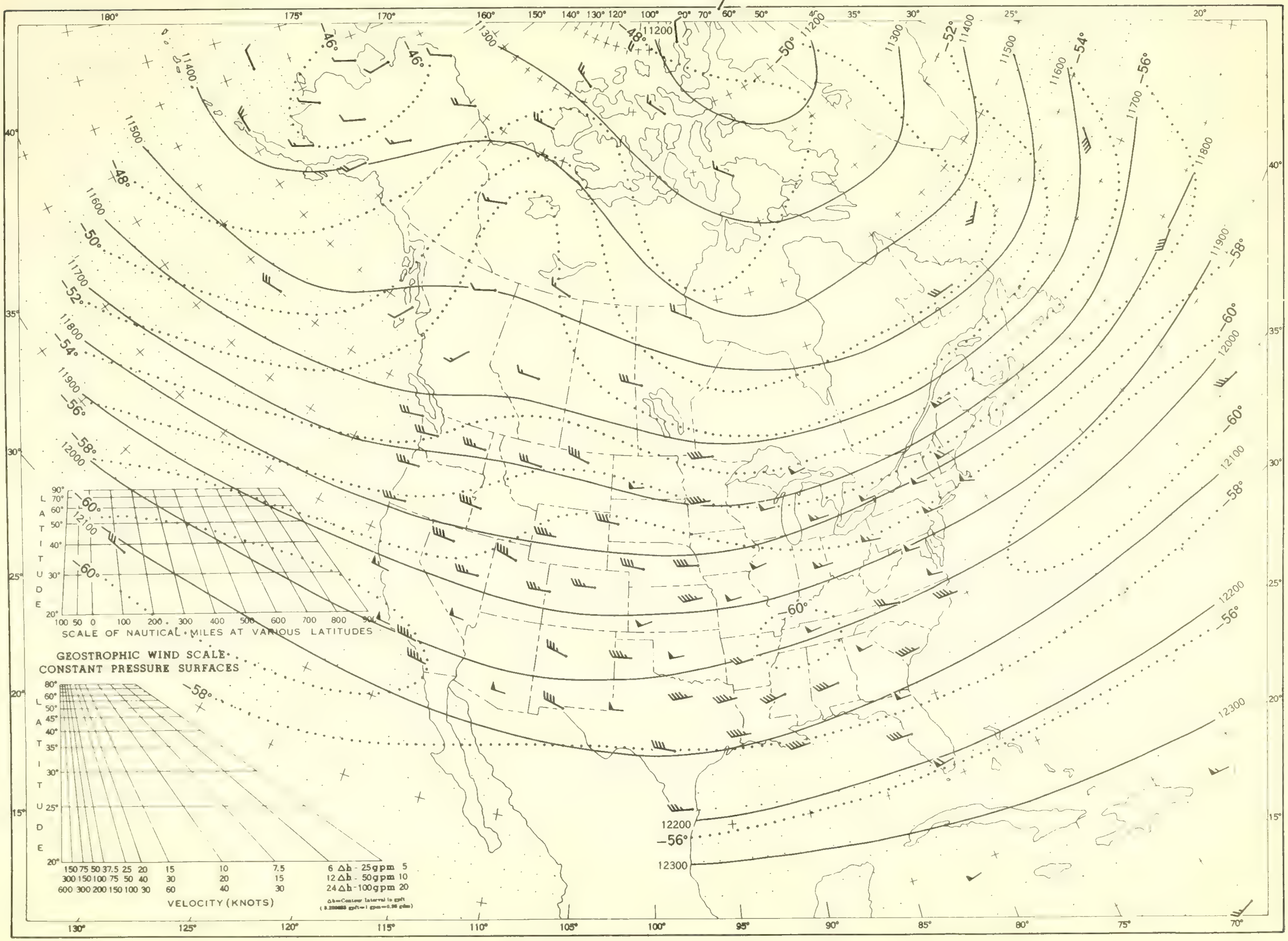
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, April 1960. Average Height and Temperature, and Resultant Winds.



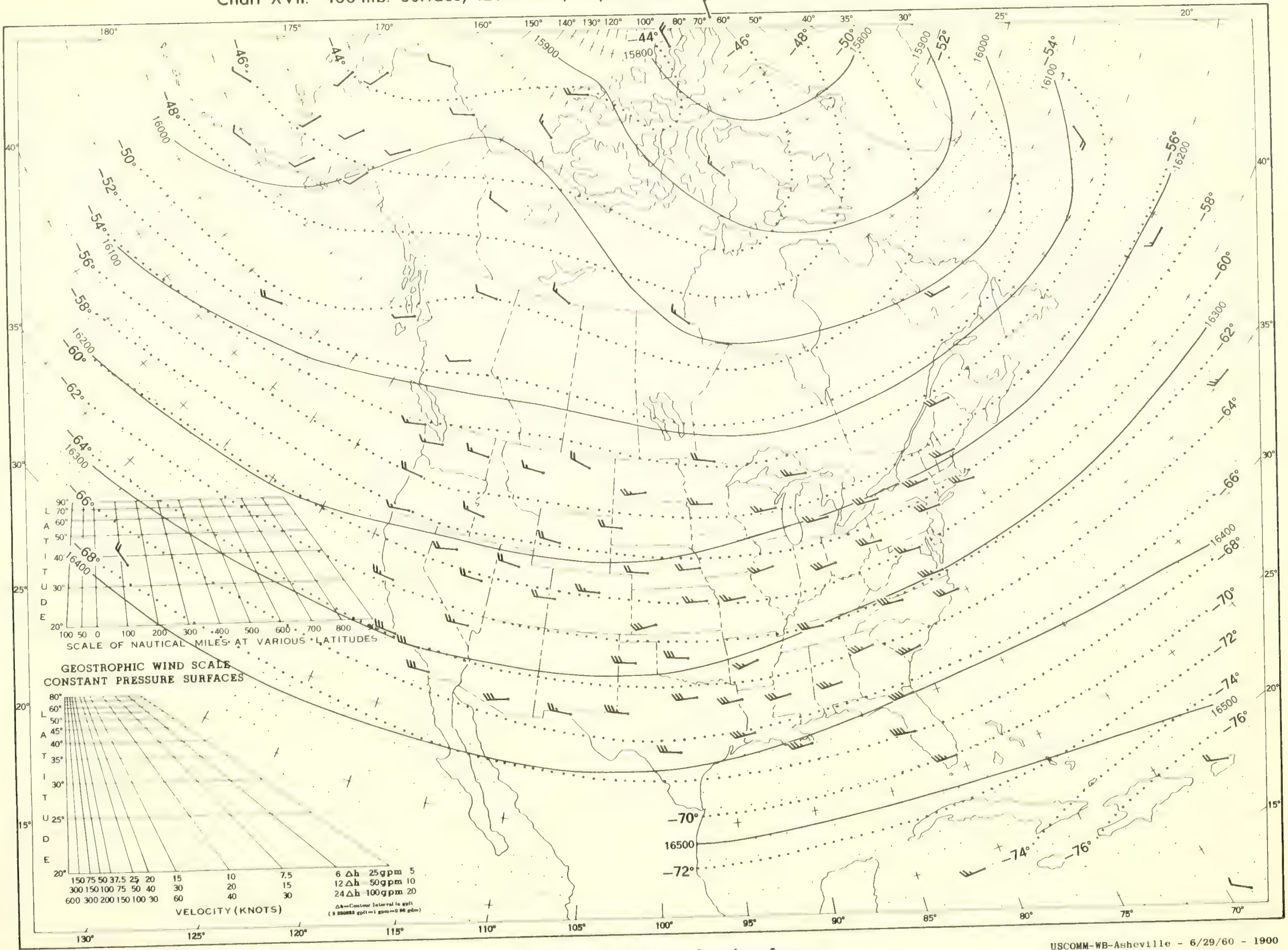
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, April 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, April 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

USCOMM-WB-Asheville - 6/29/60 - 1900

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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MAY 1960
Volume 11 No. 5

ASHEVILLE: 1960

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 5 MAY 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

Widespread precipitation in the Pacific Northwest and most of the eastern half of the country, numerous severe local storms in the Nation's midsection, and alternating periods of sharply contrasting above- and below-normal temperatures in many sections characterized the weather of May.

Generous precipitation in all areas, except the Far Southwest, most of the Plateau States, southern and central Rocky Mountains, Texas and small portions of Florida, Georgia, Tennessee, and South Carolina, provided ample moisture for most agricultural needs, but held up seasonal fieldwork and planting in many areas for most of the month, particularly in the Middle West and the Northeastern States.

TEMPERATURE.--Temperatures for the month averaged below normal in the Pacific Northwest, the Plateau and northern Rocky Mountain States, much of the Gulf States, the Mississippi and Ohio Valleys, and the central and southern Appalachian and Atlantic coastal regions. Slightly above normal averages were the rule along the California coast, in the southern and central Rocky Mountains and the northern Great Plains, from the central Great Lakes to New England and southward along the immediate Atlantic coastal plain.

The greatest departures from normal were noted in the extreme northeastern corner of the Nation, averaging up to 9° above in northern Maine, and in southeastern Wyoming where the averages were near 5° above normal. A large portion of the Pacific Northwest reported averages of 4° to 5° below normal, a mark closely approached in the lower Ohio Valley and in small coastal sections of southern Texas and Louisiana.

Several stations in the Southeastern States and the Middle West reported that this was the coldest May since 1954. The first 2 weeks were the coldest for May in parts of northern Florida and adjacent areas in over 30 years.

The entire month was unusually warm in northern New England. Daily maximum temperatures in the 70's and 80's established records for numerous dates, and at Concord, N. H., the mean monthly minimum equalled the highest previously recorded. At Caribou, Me., 91° on the 29th set a new mark for the highest temperature so early in the year.

The first week of the month, generally cooler than normal except in the Northeast, was followed by a week of unusually cold weather from the Rocky Mountains eastward, as a massive mound of polar air dominated the weather, while in the Far West a southerly flow of air brought unusually warm weather for so early in the season throughout the Mountain States, particularly on the 12th. During the period from the 9th through the 14th scores of stations from Texas to Florida, the Carolinas, and Tennessee reported record minima for so late in the season. Several of these temperature records are shown here.

Low temperatures so late in the season:

May 9	Nashville, Tenn.	37°
	Chattanooga, Tenn.	35° (Lowest in May)
May 12	Lake Charles, La.	50°
	Abilene, Tex.	41°
	Waco, Tex.	45°
May 13	Meridian, Miss.	38° (Lowest in May)
	Greenville, S. C.	39° (Lowest in May)
	Rome, Ga.	33°
	Montgomery, Ala.	42° (Lowest in May)
May 14	Lakeland, Fla.	54°

High temperatures so early in the year:

May 12	Billings, Mont.	94°
	Helena, Mont.	88°
	Salt Lake City, Utah	92°
	Casper, Wyo.	87°
	Sheridan, Wyo.	95° (Highest in May)

During the third week another reversal of the prevailing circulation patterns again brought above-normal temperatures to the East and much-below-normal temperatures to the West, with numerous additional record low readings for so late in the season from the Pacific Northwest to the southern Rocky Mountains and portions of the West Gulf region. These included:

May 19	Salt Lake City, Utah	31°
	Grand Junction, Colo.	34°
May 20	Albuquerque, N. Mex.	37°
May 21	Roswell, N. Mex.	37°
	Austin, Tex.	52°
May 22	Missoula, Mont.	22°
	Portland, Oreg.	33°
	Spokane, Wash.	31°
	Yakima, Wash.	27°
	Boise, Idaho	28°

PRECIPITATION.--Precipitation was 200 percent or more of normal along a band from eastern Nebraska to Upper Michigan, in some coastal and inland sections of the Pacific Northwest, in central Pennsylvania, eastern Oklahoma, and in coastal sections of Maine, southern Florida, and Louisiana.

Several stations in Washington, Oregon, and northern California recorded record or near-record May precipitation. Some examples: Eureka, Calif., 6.05 inches (greatest since 1911); Roseburg, Ore., 3.80 inches (greatest since 1906); in Washington, Olympia, 3.50 inches, and Seattle, 3.04 inches, (both the second largest May totals), and Stampede Pass 9.12 inches, (greatest for May).

In the upper Great Lakes and Mississippi Valley several stations also reported total May precipitation of record or near record proportions, as cloudy, cool, weather prevailed during much of the month. At La Crosse, Wis., the 8. 83 inches was the largest May total since records began there in 1873; at Madison, Wis., 6. 36 inches was the largest amount in any month since records began in 1939. At Escanaba, Mich., 7. 02 inches was the fourth greatest May total and the most for any month since June 1953, and 11. 07 inches in April and May was the wettest comparable 2-month period.

In Iowa, Dubuque recorded 4. 38 inches in 24 hours on the 5th - 6th, a record amount for May. At Waterloo, May precipitation totaled 7. 18 inches, contributing to the wettest April-May period on record.

In many sections of the Northeast persistently cool and unusually cloudy, rainy weather prevailed, with monthly precipitation totals generally well above normal in inland sections from western Virginia to New York. Some of the larger monthly totals included Elmira, N. Y., 7. 52 inches; Breezewood, Pa., 10. 94 inches; and Baltimore, Md., 7. 23 inches, the second wettest May of record there (7. 26 in 1894 is the largest May total in a record extending back to 1817). Although these cloudy and rainy conditions were also persistent along the coast from Delaware to Cape Cod, precipitation totals were below average in that area, while along the New England coast precipitation was heavier, with monthly totals over 200 percent of normal in Maine.

Very heavy rain fell during the last 4 days of the month in extreme southern Florida as a weak "easterly wave" moved westward into the Gulf of Mexico. Monthly total precipitation at Key West was 12. 90 inches, of which 11. 75 inches fell on the last 4 days, and the monthly total was 13. 62 inches at the Cape Sable Ranger Station.

In contrast to these areas of heavy precipitation, monthly totals under 50 percent of the normal values were general over Wyoming and adjacent portions of Colorado, Utah, and Idaho, over most of north and east Texas from the Panhandle and the Laredo area to western Louisiana, in the Desert Southwest, portions of central Florida, South Carolina, Georgia, and Tennessee, and isolated spots in Kansas, Michigan, and Indiana.

In Wyoming, Lander reported only 0. 78 inch, about 30 percent of normal. Only 2 years since 1891 have had less rain in the first 5 months of the year there, while at Sheridan 0. 83 inch fell in May and the 1. 67-inch total for March, April, and May is the least since records began in 1908.

In Texas, all first order Weather Bureau stations again received below-normal precipitation, continuing the dry conditions prevalent in some sections throughout this year. Along the Upper Coast, Houston's total was 0. 88 inch, about 18 percent of the normal amount for May. The first 5 months of this year have been the driest there since 1937. Port Arthur received only 0. 55 inch, and at Lake Charles, La., the 0. 42 inch total was only 9 percent of the monthly normal.

Many stations in central Florida, including Daytona Beach (0. 62 inch), Lakeland (0. 89 inch), and Orlando (0. 50 inch), received less than 25 percent of the long-term average precipitation. In northern Georgia and South Carolina and portions of North Carolina, up to 2 weeks were completely rainless and several sections also reported only 25 to 50 percent of the usual monthly total.

SNOWFALL. --Snowfall was scattered across the northern tier of States and in mountainous sections of the Western States. Early in the month Dubuque, Iowa reported 1 inch on the 7th - 8th, the latest date there for measurable snow. Marquette, Mich., had 9. 4 inches, the second largest May total there. Lighter totals were recorded in scattered sections from Michigan to Montana. Blue Canyon and Mt. Shasta, Calif., both reported 16. 4 inches during the month, a record amount at the latter station for May in the past 73 years.

The latest measurable snow of record at Salt Lake City (1. 0 inch) occurred on the 18th, and Colorado Springs, Colo., reported 2. 7 inches on the 19th.

The second highest snowfall for May totaled 31 inches at Stampede Pass, Wash., where measurable amounts fell on 14 days.

DESTRUCTIVE STORMS. --Numerous tornadoes occurred during May, especially on the 5th and 6th and on the 18th, 19th, and 20th in the middle Mississippi Valley and central and southern Great Plains with widespread local damage. Additional severe local storms occurred in scattered sections of the South and Midwest on several days. The most lethal severe storms occurred on the 5th in eastern Oklahoma when 23 or more persons lost their lives as a series of tornadoes swept through the area from near Tulsa southward to Wilburton in southeastern Oklahoma. The usual severe thunderstorms with hail, high winds, and torrential rains in the Great Plains and the Mississippi Valley caused additional crop and property damage, totaling in the millions of dollars. The heaviest hail reported was on the 15th some 20 miles west-southwest of Pueblo, Colo., where accumulations of 7 to 13 inches were measured on the ground.

CONDENSED CLIMATOLOGICAL SUMMARY

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In		In
Alabama	2 Stations	97	25+	2 Stations	30	13+	Citronelle	8.03	Gadsden Gas Plant	0.50
Arizona	Yuma WB AP	113	11	Alpine	11	20	McNary	1.30	53 Stations	.00
Arkansas	Paris	93	23	6 Stations	29	12+	Mena	11.47	Monticello 3S	1.51
California	Cow Creek	116	11	White Mountain 2	0	23	Orick 10SE	12.46	95 Stations	.00
Colorado	Eversoll Ranch	98	13	Climax 2NW	8	1	Sedwick 5S	7.67	Doherty Ranch	.00
Connecticut	Hartford Brainard Field	85	19	Coventry	25	3	Storrs	5.24	Nathan Hale State Forest	2.65
Delaware	2 Stations	86	17+	Georgetown 5SW	32	4+	Wilmington Porter Resvr	6.48	Selbyville	3.79
Florida	3 Stations	99	31+	2 Stations	41	9	Cape Sable Ranger Station	13.62	Bay Lake	.34
Georgia	Fort Valley 3E	100	24	Blairsville Exp sta	26	14	Nahunta	5.45	Greenville 2W	.35
Idaho	Glenns Ferry	97	11	Warren	11	22	Headquarters	5.29	Picabo	.07
Illinois	Du Quoin 2S	92	24	5 Stations	30	12+	Galena	8.23	Peotone	2.42
Indiana	2 Stations	89	25+	2 Stations	28	2	Princeton 1W	7.15	Wheatfield	1.54
Iowa	do	89	31+	Le Mars 2N	24	8	Marshalltown	10.01	Creston 2SW	2.90
Kansas	Syracuse 2WNW	99	13	2 Stations	28	1	Phillipsburg	7.85	Elkhart	.29
Kentucky	Inez	96	21	Blaine	27	2	Oneonta Dam 35	6.39	Bowling Green Substa	1.65
Louisiana	2 Stations	97	31+	Many 4NNE	36	13	Burrwood WB	8.95	Gueydan 5S	T
Maine	Hiram 2S	93	29	Cupsuptic Storehouse	24	3	South Andover	8.48	Jackman	2.27
Maryland	Ocean City	95	16	Oakland 1SE	23	2	Bentley Springs 1WNW	8.79	Salisbury FAA Airport	2.90
Massachusetts	Framingham	92	19	Barre Falls Dam	26	3	Worcester WB AP	5.59	Nantucket WB Airport	1.76
Michigan	Adrian	85	20	Alberta Ford For Cen	19	1	Steuben 2WNW	8.44	Romeo 1N	1.58
Minnesota	Ada	89	31	2 Stations	16	3	Montgomery	10.45	Baudette	.82
Mississippi	Quitman	97	27	4 Stations	35	13+	Tylertown 2N	11.50	Winona 4ENE	1.94
Missouri	2 Stations	93	24+	2 Stations	24	1	Spickard 7W	8.97	St. Joseph WB AP	2.30
Montana	Forsyth 2E	99	12	Lima	14	18	Hungry Horse Dam	5.03	Bridger	.23
Nebraska	Nenzel 20S	96	13	Harrison	18	1	Valparaiso	8.69	McCook	1.73
Nevada	Overton	109	12	Rand Ranch Palisade	12	19	Jarbidge	2.19	9 Stations	.00
New Hampshire	Berlin	89	19	Grafton	23	3	Conway 1N	8.15	Monroe 5NNE	2.07
New Jersey	5 Stations	85	20	Layton 3NW	25	2	Essex Fells Serv Bldg	6.02	Long Branch	1.85
New Mexico	3 Stations	102	28+	Gavilan	11	25+	Fort Stanton	3.12	17 Stations	.00
New York	Whitehall	88	29+	2 Stations	23	2	Elmira FAA AP	7.52	2 Stations	1.51
North Carolina	Whiteville	96	30+	Celo 2S	25	2	Williamston 1ESE	8.67	Tomotla	1.19
North Dakota	4 Stations	93	12	Arvilla State Park	15	3	Edgeley Exp Farm	6.50	Raub 10SSW	.77
Ohio	2 Stations	90	21+	Millport 2NW	24	2	Kings Mills	7.08	Toledo Sewage	2.43
Oklahoma	Kenton	101	13	Grove 1E	27	1	Wilburton	16.52	Boise City 2E	.14
Oregon	Spray	92	10	Fremont	11	21	Gold Beach RS	13.83	Redmond	.44
Pennsylvania	Kegg	90	20	Coudersport 3NW	18	2	Breezewood	10.94	Wilkes Barre	3.02
Puerto Rico	Juana Diaz Camp	97	29	Garzas Dam	50	17	San Sebastian	22.19	Comerio Falls Plant	1.42
Rhode Island	Greenville	83	20	Kingston	29	3	Block Island WB AP	4.37	Newport	3.57
South Carolina	Ridgeland 2SE	100	24	2 Stations	32	13	Salem	5.41	Sullivans Island	.93
South Dakota	2 Stations	94	13	Deerfield 5NW	16	6	Tyndall	7.78	Hot Springs	.27
Tennessee	do	94	25+	Mountain City 2	26	2	Lynchburg	5.70	Chickamauga Dam	.88
Texas	Encinal 3NW	110	16	Miami	27	1	Electra	8.55	3 Stations	.00
Utah	St George PH	101	11	Bryce Canyon FAA AP	11	24	Pleasant Creek PH	2.00	2 Stations	.00
Vermont	Waterbury 1NNE	90	29	Cavendish	25	3	Reading Hill	5.62	Huntington Center	1.56
Virginia	5 Stations	95	21	Burkes Garden	25	2	Montebello 3NE	10.34	Rose Hill	1.86
Washington	do	90	11+	Rainier Paradise RS	18	22	Clearwater	13.72	Priest Rapids Dam	.18
West Virginia	Logan	93	21	Birch River 6SSW	21	2	Harpers Ferry Nat Monmt	8.31	Hico	2.53
Wisconsin	Bayfield 6N	86	15	2 Stations	19	11+	Cashton 4SSE	9.56	2 Stations	2.60
Wyoming	Arvada 3N	98	12	Bondurant 3NW	13	15	LaGrange	4.07	do	.00

† And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb.	°F	°F.	°F.	°F.	°F.		°F.		#		°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	989.4	1014.7	81	56	68.2	-1.3	94	24+	38	13	9	0	55	65	2.28	-1.46	1.15	6	5	0.0	0	8.5	WNW	34	W	26	10	13	8	5.4	73
Huntsville	605	991.1	1014.2	81	55	67.6	----	96	20	39	13	7	0	53	64	3.35	----	2.22	5	7	.0	0	7.3	SE	*31	ESE	6	10	13	8	5.2	--
Mobile	211	1012.7	1014.9	81	60	70.7	-2.7	92	23	43	13	4	0	59	71	5.24	.60	3.56	8	6	.0	0	9.3	S	*46	ESE	7	7	15	9	5.7	--
Montgomery	195	1006.5	1014.7	82	58	70.2	-2.3	95	24	42	13	10	0	57	65	3.25	-.21	1.81	6	6	.0	0	8.7	SW	34	SE	7	8	14	9	5.2	75
ALASKA																																
Anchorage	90	1005.4	1010.4	57	41	49.1	3.4	72	22	32	10+	3	2	38	65	.44	-.07	.21	5	0	.0	0	9.2	S	*22	SSE	22+	1	7	23	8.3	44
Annette	110	1006.8	1012.4	56	43	49.4	.4	75	22	38	18	2	0	42	77	5.02	.53	1.06	21	0	.0	0	9.2	SSE	*37	SE	31	4	5	22	7.7	--
Barrow	22	1018.6	1019.2	26	16	20.7	1.9	35	25	3	6	0	31	16	79	.27	.11	.07	10	0	2.2	14	15.9	E	*37	E	22	7	4	20	7.0	--
Barter Island	39	1016.6	1018.5	28	21	24.3	4.1	36	29+	12	7	0	31	22	90	.08	-.14	.04	4	0	.8	15	15.6	E	*38	E	23+	1	3	27	9.1	--
Bethel	125	1008.1	1009.5	52	34	43.3	3.3	76	26	28	20+	1	13	37	80	.88	-.01	.44	10	0	.6	1	13.6	S	*41	S	11	2	11	18	7.9	--
Cold Bay	90	1005.4	1009.7	45	35	39.6	.1	52	27	32	31+	0	3	35	85	2.10	.41	.35	15	0	.8	T	13.3	SSE	*40	SSE	20	0	2	29	9.3	--
Cordova	40	1009.8	1011.6	55	37	46.1	3.2	71	21	30	13+	1	6	40	79	2.59	-3.85	.78	14	0	.0	0	4.4	ESE	*17	SSE	29+	1	5	25	8.7	--
Fairbanks	436	991.9	1009.4	65	41	53.1	5.7	89	24	29	11+	8	4	33	48	.26	-.48	.18	3	0	T	1	8.6	NNE	*22	ENE	25	11	10	10	4.8	--
Juneau	17	1010.5	1011.2	59	40	49.5	2.5	73	22	30	9	3	1	40	72	1.52	-1.67	.49	13	0	.0	0	8.0	ESE	*22	ESE	8	4	5	22	7.6	40
King Salmon	44	1006.8	1009.0	52	35	43.7	.9	66	25+	27	3	0	9	37	77	1.26	.00	.50	14	2	T	0	10.7	[illegible]	*35	E	15	0	9	22	8.5	--
Kotzebue	10	1011.5	1012.0	40	29	34.5	4.9	60	27	22	21+	0	24	30	86	.57	.24	.16	11	0	2.2	17	13.1	WNW	*32	WNW	29	5	9	17	7.0	--
McGrath	334	996.6	1009.2	59	37	48.1	4.9	80	26	27	2	3	11	33	59	1.67	.73	1.11	8	0	.1	12	6.0	NNW	*21	S	11	6	6	19	7.3	--
Nome	13	1009.8	1010.3	47	34	40.2	6.5	62	16	29	30+	0	14	32	74	1.09	.50	.60	7	0	.6	12	10.6	N	*30	SE	12	7	10	14	6.4	58
Shemya	122	1008.5	1012.3	42	35	38.1	----	46	30+	31	3+	0	4	34	85	1.74	----	.51	20	0	1.1	1	19.3	N	*40	S	8	0	4	27	9.1	--
St. Paul Island	22	1008.5	1009.8	38	29	33.8	-1.4	47	16	22	14	0	27	31	89	1.11	-.07	.30	13	0	3.6	2	----	---	--	---	--	2	1	28	9.2	--
Yakutat	28	1011.2	1012.1	55	37	46.3	3.0	76	21	29	10+	4	5	39	76	2.73	-5.19	1.08	16	0	.0	T	6.3	ENE	*21	SE	31	6	6	19	7.1	--
ARIZONA																																
Flagstaff	6993	------	------	68	33	50.5	.5	81	11	20	20	0	14	--	--	.71	.18	.71	2	2	3.6	4	----	---	--	---	--	19	7	5	3.9	--
Phoenix	1114	970.2	1008.5	93	63	77.8	2.3	107	11	53	5	19	0	35	23	T	-.17	T	0	1	.0	0	6.8	E	*21	SSE	14	22	5	4	2.5	98
Prescott	5014	845.2	1010.6	78	45	61.2	.3	91	11	33	20+	1	0	25	30	.34	.04	.32	3	1	.0	0	10.8	SSW	40	S	13	20	8	3	3.0	89
Tucson	2584	922.1	1008.6	89	55	71.9	-1.2	102	11	46	25	15	0	28	22	.08	-.13	.08	1	0	.0	0	9.2	SSE	33	SW	14	24	5	2	1.9	97
Winslow	4880	849.0	1009.2	80	45	62.5	.5	94	12	35	20+	3	0	21	25	.50	.18	.34	5	2	.0	0	11.3	SW	*37	NW	31	17	6	8	3.9	--
Yuma	199	1003.7	1008.9	96	63	79.7	-.7	113	11	54	5	24	0	35	24	.01	-.01	.01	1	0	.0	0	8.0	S	25	N	19+	27	2	2	1.3	98
ARKANSAS																																
Fort Smith	458	995.9	1012.8	80	56	67.9	-1.7	92	24+	36	1	4	0	56	70	8.79	3.73	3.05	8	12	.0	0	8.9	NE	57	NW	5	10	9	12	5.3	58
Little Rock	257	1000.0	1013.2	81	56	68.4	-1.4	90	23	40	12	1	0	56	69	5.29	.44	1.52	6	7	.0	0	8.6	SW	*32	NW	6+	10	11	10	5.2	67
Texarkana	361	------	1013.4	82	59	70.1	-1.8	90	19	41	1	1	0	--	--	4.12	-1.01	1.60	9	9	.0	0	8.9	SSE	--	---	--	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	996.6	1014.7	82	55	68.7	-1.5	98	31	44	22	7	0	44	43	T	-.35	T	0	0	.0	0	8.4	NW	*32	NW	20+	17	10	4	3.2	--
Bishop	4108	871.0	1009.8	83	43	63.0	.4	97	31	32	24	7	1	--	--	.01	-.19	.01	1	1	.0	0	----	---	--	---	--	11	18	2	4.2	--
Blue Canyon	5280	838.5	1014.6	58	41	49.3	-2.9	77	31	27	23+	0	6	--	--	3.15	.67	1.81	10	2	16.4	12	8.2	SSW	37	SW	20	10	6	15	5.9	--
Burbank	699	987.1	1013.1	78	56	66.9	2.9	93	11	46	23	2	0	47	54	.02	-.25	.02	2	0	.0	0	6.8	SSE	*28	NNW	4	18	6	7	3.4	--
Eureka (U)	43	1016.6	1019.0	58	48	53.3	.4	71	11	42	21	0	0	--	--	6.05	4.23	2.05	17	0	.0	0	9.0	Φ N	30	SE	25	3	7	21	7.7	53
Fresno	331	1002.0	1014.1	81	51	66.1	-2.8	97	31	44	23+	6	0	42	46	.02	-.26	.02	1	0	.0	0	9.5	NW	26	NW	20+	20	10	1	2.8	96
Long Beach	34	1012.9	1013.8	77	55	66.0	----	90	11+	46	23	2	0	52	66	.22	----	.22	2	0	.0	0	7.6	S	*22	WNW	24+	17	7	7	3.7	--
Los Angeles (U)	312	------	------	77	58	67.7	2.9	89	11	51	23+	0	0	52	64	.05	-.21	.05	2	0	.0	0	6.4	Φ W	25	W	24	18	9	4	3.4	80
Los Angeles	99	1009.8	1013.5	71	56	63.9	1.8	79	20	49	23	0	0	52	67	T	-.30	T	0	0	.0	0	7.7	WSW	*20	W	24+	17	9	5	3.5	--
Mt. Shasta (R)	3544	891.6	1015.6	62	37	49.8	-3.7	79	30	26	22	0	7	--	--	3.18	1.51	1.90	10	0	16.4	8	----	---	--	---	--	12	6	13	5.5	--
Oakland	3	1016.9	1017.2	68	50	59.1	.7	80	19	44	22	0	0	48	70	.63	.02	.41	3	0	.0	0	11.2	WNW	*28	WNW	21	15	7	9	4.5	--
Point Arguello	367	1002.0	1015.5	61	48	54.4	----	69	6	43	23	0	0	--	--	.04	----	.03	3	0	.0	0	11.7	---	*28	NW	21+	13	9	9	4.9	--
Red Bluff	341	1002.0	1014.7	77	53	64.8	-3.2	98	31+	40	22	4	0	41	47	.48	-.58	.24	5	0	.0	0	11.6	SSE	40	SE	23	11	8	12	5.4	83
Sacramento	17	1014.2	1015.2	80	49	64.9	.9	99	31	38	22	4	0	47	60	.55	.01	.51	4	0	.0	0	7.6	SW	31	SW	20	16	8	7	4.3	84
Sandberg (R)	4517	861.5	1012.2	68	46	56.9	.2	85	31+	32	23+	0	2	--	--	T	-.25	T	0	0	.0	0	16.5	N	*55	NNW	18	20	8	3	2.5	--
San Diego	19	1010.2	1013.3	72	58	64.8	1.6	83	7	51	5	0	0	54	71	.17	-.09	.17	2	0	.0	0	7.6	SSW	22	SW	14	15	6	10	4.6	62
San Francisco (U)	52	------	------	63	51	56.9	-.2	72	19	48	21+	0	0	--	--	.85	.26	.57	3	0	.0	0	10.5	Φ W	34	W	15	--	--	--	----	84
San Francisco	8	1016.6	1017.3	67	50	58.3	1.7	81	31	44	5	0	0	48	73	.54	.14	.31	3	0	.0	0	15.2	WNW	44	WNW	17	17	7	7	4.4	--
Santa Maria	238	1007.1	1015.8	67	46	56.5	-1.2	80	13	38	23	0	0	46	72	T	-.32	T	0	0	.0	0	10.9	WNW	*37	W	21	19	10	2	2.7	--
COLORADO																																
Alamosa	7536	770.1	1013.0	67	32	49.2	-1.6	79	12	20	20+	0	14	--	--	.15	-.42	.08	3	2	T	T	----	---	--	---	--	8	16	7	5.2	--
Colorado Springs	6173	809.3	1012.2	69	41	54.7	-.7	82	12	29	1	0	5	32	49	1.61	-.45	.69	6	6	2.8	T	11.1	N	*35	N	5	10	9	12	5.8	--
Denver	5292	835.8	1011.3	70	44	57.2	.9	84	12	32	1	0	1	33	47	2.27	.07	.97	7	5	T	T	10.3	SSW	35	NW	18	9	13	9	5.5	65
Grand Junction	4849	856.4	1010.2	75	48	61.4	-.7	92	12	34	19	1	0	23	28	.35	-.33	.16	5	2	T	T	10.4	ESE	47	S	23	7	13	11	5.6	73
Pueblo	4639	854.0	1010.7	76	44	59.7	.5	88	23	32	1	0	1	36	48	1.06	-.67	.49	6	5	.0	0	9.3	SE	57	N	5	10	8	13	5.5	79
CONNECTICUT																																
Bridgeport	7	1013.7	1014.7	67	50	58.6	1.4	81	16	38	2	0	0	50	77	2.66	-.94	1.02	12	2	.0	0	9.8	E	40	E	23	7	7	17	7.0	--
Hartford	169	1008.1	1014.1	72	48	60.0	.3	84	27	34	3	0	0	49	72	3.02	-.64	.61	13	1	.0	0	7.4	S	‡39	NW	16	6	5	20	7.0	52
New Haven	6	1013.7	------	67	49	57.9	1.2	79	16	35	3	0	0	--	--	3.16	-.71	1.02	16	3	.0	0	7.0	---	23	N	16	6	6	19	7.0	54
DELAWARE																																
Wilmington	78	1010.5	1013.8	71	50	60.6	-2.2	82	16	35	2	0	0	52	76	5.12	1.31	1.07	15	8	.0	0	8.3	[illegible]	24	S	7	6	7	18	6.9	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	73	54	63.3	-1.9	90	21	42	2	1	0	--	--	4.91	1.00	1.74	11	--	.0	0	----	---	--	---	--	--	--	--	----	--
Wash. Nat'l. AP	14	1009.0	1013.5	73	55	63.7	-1.0	87	21+	42	2	0	0	51	66	4.35	.37	1.45	13	6	.0	0	11.1	S	34	NNW	21+	5	10	16	7.0	47
FLORIDA																																
Apalachicola (U)	13	1012.7	------	79	64	71.7	-2.7	89	23	50	13	0	0	--	--	1.78	-1.05	.83	4	4	.0	0	7.7	---	28	NW	26	15	6	10	4.8	77
Daytona Beach	31	1013.7	1015.6	84	62	72.9	-1.5	92	24+	50	15+	5	0	63	77	.62	-2.65	.48	3	4	.0	0	8.8	SW	*25	WSW	11	10	9	12	5.5	--
Fort Myers	15	1014.3	------	87	65	75.6	-1.3	94	20	54	15+	9	0	--	--	2.20	-2.09	1.16	7	7	.0	0	5.2	---	*23	NW	8	9	14	8	5.1	--
Jacksonville	24	1013.8	1015.1	86	63	74.8	-.1	97	24+	52	13+	13	0	60	67	1.18	-2.25	.52	5	5	.0	0	9.1	WSW	27	S	5	10	11	10	5.3	67
Key West	5	1013.5	------	84	74	79.0	-.8	89	22	66	10	0	0	--	--	12.90	10.08	8.89	7	3	.0	0	9.2	---	30	S	8	9	9	13	5.9	65
Lakeland (U)	214	------	------	85	66	75.4	-1.1	94	23	54	14	10	0	--	--	.89	-3.70	.46	7	7	.0	0	6.0	---	--	---	--	10	9	12	5.3	76
Miami	7	1013.6	1014.8	85	69	77.0	-1.0	90	25+	58	9	2	0	66	72	3.46	-2.09	.77	9	7	.0	0	7.8	ESE	25	ESE	31	10	13	8	5.3	--
Miami Beach	9	------	------	83	73	77.9	-.5	88	26	61	9	0	0	--	--	2.41	-1.52	.70	9	--	.0	0	----	---	¢26	S	8	10	13	8	5.2	69
Orlando	106	1010.9	1015.4	87	65	76.0	-.5	96	24	52	14	11	0	62	68	.50	-3.52	.30	5	6	.0	0	8.4	WNW	*20	WNW	8	12	11	8	4.9	--
Pensacola (U)	13	------	------	78	64	71.2	-2.6	89	23	47	13	0	0	--	--	5.66	1.30	2.41	6	7	.0	0	†10.9	---	29	NW	11	--	--	--	----	64
Tallahassee	64	1012.0	1014.8	83	60	71.4	-2.8	93	24+	46	9	8	0	59	72	3.25	-.51	1.42	7	4	.0	0	5.7	NNW	*29	NW	7	6	13	12	6.0	--
Tampa	19	1013.8	1015.4	85	66	75.6	-.9	93	24	55	14	8	0	63	70	1.07	-2.22	.74	5	3	.0	0	9.5	W	*30	NW	8	9	12	10	5.4	78
West Palm Beach	15	1013.7	1014.7	86	66	75.9	-1.2	91	26+	54	9	5	0	66	73	2.09	-2.97	.89	11	9	.0	0	8.5	ENE	*38	SSW	27	9	13	19	5.3	--
GEORGIA																																
Athens	798	985.7	1014.6	81	55	68.0	-2.4	94	24	38	13	9	0	53	63	1.89	-1.94	1.41	3	5	.0	0	8.3	WNW	*23	SSW	26	14	10	7	4.3	--
Atlanta	975	973.1	1014.2	79	58	68.5	-1.5	93	25	42	13+	5	0	52	59	.96	-2.86	.90	2	1	.0	0	11.1	W	*25	W	9+	13	10	8	4.6	75
Augusta	143	1006.9	1013.5	84	57	70.2	-1.3	95	24	43	13	11	0	--	--	2.16	-1.12	.93	5	7	.0	0	6.6	WSW	*29	WSW	26	9	13	9	5.0	--
Columbus	385	1000.5	------	83	56	69.3	-2.7	95	24	41	13	10	0	57	66	2.12	-.96	1.40	4	4	.0	0	7.2	---	*35	SSW	26	13	11	7	4.9	--
Macon	356	1000.7	1014.1	86	59	72.3	-1.3	97	25+	42	13	15	0	54	58	1.32	-1.90	1.12	3	3	.0	0	9.6	WNW	60	SW	26	14	11	6	4.6	77
Rome	637	991.2	------	80	50	65.2	-4.0	94	24	33	13	9	0	51	64	.89	-3.18	.65	4	4	.0	0	4.5	---	--	---	--	12	14	5	4.6	--
Savannah	48	1011.9	1014.4	84	60	72.3	-.6	97	25	46	13	10	0	59	68	4.01	1.10	1.65	10	8	.0	0	8.7	SW	31	W	26	14	10	7	4.7	82
Thomasville	283	------	------	85	61	73.0	-1.2	97	19	46	13	12	0	--	--	2.10	-1.52	.96	6	5	.0	0	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature								No. of days		Average dew point	Average relative humidity	Precipitation			No of days		Snow, Sleet		Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Fastest mile Speed	Fastest mile Direction	Fastest mile Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F	°F	°F	°F.	°F.		°F				°F	%	In.	In.	In			In	In	M p h		M p h			0–3	4–7	8–10	0–10	%
HAWAII																																
Hilo	31	1015.9	1017.3	81	66	73.4	0.3	84	7+	62	2+	0	0	66	78	11.70	2.70	4.63	27	1	0.0	0	8.3	WSW	*23	S	12	5	8	18	7.2	30
Honolulu	7	1016.9	1017.3	84	71	77.1	1.0	85	31+	66	13+	0	0	65	67	3.85	3.45	1.81	8	1	.0	0	11.7	ENE	32	NE	19	7	19	5	5.5	77
Lihue	115	1012.9	1018.0	83	70	76.5	2.4	85	28+	64	1	0	0	67	75	2.70	.19	1.52	20	1	.0	0	13.8	NE	26	NE	29	1	17	10	6.2	61
IDAHO																																
Boise	2842	918.4	1014.3	68	41	54.5	-3.6	86	11	28	22+	0	2	35	54	1.21	.12	.51	12	0	T	0	8.7	NW	*28	NNW	12	5	6	20	7.2	65
Idaho Falls 46W (R)	4933	846.6	1013.5	67	35	50.9	-1.7	87	11	24	19+	0	10	--	--	.70	-.32	.30	4	1	1.1	1	10.7	SW	a38	WSW	23	-	-		-	--
Idaho Falls 42NW (R)	4790	------	------	67	34	50.2	-1.8	86	11	22	18	0	12	--	--	.27	-.77	.13	4	--	---	--	6.7	SW	a28	SW	23	--	-	-	- --	--
Lewiston	1413	963.1	1014.6	67	43	55.0	-3.9	86	10	32	22	0	1	--	--	1.67	.25	.63	17	2	T	T	----	---	--	---	--	1	8	22	8.2	-
Pocatello	4444	861.2	1013.6	67	40	53.7	-1.6	90	11	30	24	1	2	31	47	.53	-.68	.23	7	0	T	0	14.0	SW	56	SW	12	5	10	16	7.0	76
ILLINOIS																																
Cairo (U)	314	999.3	------	77	57	66.7	-2.1	91	29	40	12	3	0	--	--	3.23	-.86	1.26	8	9	.0	0	8.6	SW	36	SW	29	12	9	10	5.0	68
Chicago (O'Hare)	656	986.1	1010.7	67	49	57.7	----	82	15	34	12	0	0	46	71	2.46	----	1.21	13	2	T	0	12.0	SSW	*31	SW	6	5	9	17	7.1	--
Chicago (Midway)	610	988.2	1010.8	68	50	58.6	-.6	84	15	35	12	0	0	46	67	2.83	-.83	1.44	14	1	T	0	12.1	SW	31	SE	6	6	9	16	6.8	57
Moline	589	988.2	1010.1	68	49	58.9	-2.0	83	15	33	12	0	0	49	73	3.98	.54	1.05	11	5	T	0	10.2	WNW	28	SE	24	7	6	18	6.8	43
Peoria	654	989.2	1011.4	67	48	57.8	-3.2	84	15	32	12	0	1	50	76	6.33	2.39	2.52	15	6	T	0	10.5	S	47	NW	24	6	6	19	7.0	43
Rockford	728	983.7	1010.8	67	47	57.2	-1.5	82	31	33	1	0	0	47	73	4.66	1.24	2.17	14	4	T	0	9.7	S	*25	WSW	2	7	7	17	6.9	--
Springfield	589	988.2	1011.4	69	51	59.6	-2.4	83	15	33	12	0	0	50	72	4.07	-.12	1.27	13	6	.0	0	12.4	NW	58	W	25	8	5	18	6.9	48
INDIANA																																
Evansville	383	996.6	1012.4	73	52	62.4	-3.1	87	24	35	2	0	0	52	71	3.97	.07	1.15	11	8	0	0	9.6	NW	42	NW	24	8	7	16	6.5	62
Fort Wayne	801	980.7	1011.7	67	48	57.8	-1.2	83	20	35	13	0	0	48	74	4.30	.86	.71	18	6	T	0	12.3	S	57	S	20	4	6	21	7.4	61
Indianapolis	793	982.1	1012.0	68	49	58.8	-2.6	81	26+	34	1	0	0	50	76	4.04	.19	.86	14	5	T	0	8.5	S	35	S	6	6	7	18	7.2	53
South Bend	768	982.7	1010.8	67	47	56.9	-1.5	83	15	33	12	0	0	47	73	1.83	-2.01	.48	13	4	T	0	11.1	NW	*29	SSW	7	7	7	17	7.2	--
IOWA																																
Burlington	694	986.1	1011.5	70	50	59.9	-2.0	85	15	33	9	0	0	49	72	4.65	.83	1.32	13	5	.0	0	12.2	SSW	43	NW	24	6	9	16	6.6	58
Des Moines	948	980.4	1011.4	72	50	61.0	-.2	83	14	34	1	0	0	48	67	7.53	3.93	2.71	11	6	.0	0	12.7	S	42	SE	20	7	9	15	6.2	57
Dubuque	1065	985.8	1011.1	66	47	56.5	-1.4	80	15	30	1	0	2	46	69	7.24	3.77	4.38	13	6	1.0	1	----	---	--	---	--	6	6	19	7.3	--
Sioux City	1094	970.2	1010.9	73	49	60.8	.4	88	31	35	8	0	0	44	62	3.89	.55	1.02	13	9	.0	0	13.7	NW	45	NW	26	8	8	15	6.3	64
Waterloo	870	978.3	1010.1	69	48	58.4	-1.1	81	31+	33	12+	0	0	48	73	7.18	3.64	3.15	16	9	T	0	11.2	NW	*40	N	6	5	6	20	7.3	--
KANSAS																																
Concordia (U)	1375	961.7	------	74	53	63.2	.0	87	24	40	12+	0	0	--	64	3.74	.13	1.94	10	9	0	0	8.5	S	32	N	6	14	9	8	4.5	76
Dodge City	2594	924.1	1011.2	75	50	62.7	-.3	94	24	36	1	2	0	47	62	2.32	-.59	1.04	11	9	0	0	16.3	SSE	53	NW	6	11	11	9	5.4	75
Goodland	3645	885.2	1010.8	73	43	58.4	.3	91	13	33	1	2	0	40	59	1.72	-.97	1.25	6	7	.0	0	12.9	S	*38	NNW	24	15	6	10	5.1	--
Topeka	877	975.6	1011.3	75	51	63.3	-.5	88	24+	32	1	0	1	49	64	1.70	-2.62	.41	12	9	.0	0	11.9	S	36	S	3	10	9	12	5.6	68
Wichita	1321	962.8	1011.1	76	53	64.6	-.3	89	22+	35	1	0	0	52	66	4.10	.31	1.44	10	10	0	0	14.1	S	52	W	20	9	10	12	5.7	65
KENTUCKY																																
Lexington	979	977.9	1013.5	72	51	61.6	-2.5	87	20	36	9	0	0	49	69	4.03	.47	2.12	9	4	.0	0	8.3	S	--	---	--	6	12	13	6.4	--
Louisville	474	993.4	1012.7	76	52	63.9	-1.4	90	19	36	8	1	0	50	67	3.52	-.41	1.28	11	6	.0	0	7.4	W	35	S	6	6	11	14	6.6	47
LOUISIANA																																
Alexandria	107	1009.5	1014.1	84	58	71.4	----	94	28	43	13	10	0	59	69	5.98	----	4.18	5	5	.0	0	7.3	S	--	---	--	11	13	7	5.1	--
Baton Rouge	64	1011.9	1014.8	84	62	73.1	-.5	93	31+	46	13	8	0	61	70	4.28	-.64	2.02	8	5	.0	0	9.2	S	--	---	--	7	19	5	5.2	--
Lake Charles	12	1012.9	1014.3	82	63	72.6	-1.9	91	31	50	12	2	0	61	71	.42	-4.31	.27	5	1	.0	0	10.8	S	*27	SSE	5	5	17	9	5.6	--
New Orleans (U)	9	------	------	83	67	74.6	-1.5	90	31+	52	12	7	0	--	69	4.57	-.86	4.05	8	2	.0	0	6.1	---	21	NE	11	15	6	10	5.1	58
New Orleans	3	1012.5	1014.5	82	60	71.3	-3.3	91	28	41	13	3	0	62	73	3.30	-2.24	2.40	8	4	.0	0	8.7	SSE	*27	N	11	11	14	6	4.9	--
Shreveport	252	1004.7	1013.8	84	59	71.3	-2.4	92	31+	42	12	8	0	57	64	1.88	-2.67	.88	7	4	.0	0	11.4	S	--	---	--	10	12	9	5.2	79
MAINE																																
Caribou	624	991.7	1014.6	69	45	57.1	8.6	91	29	29	3	1	2	46	71	3.36	.22	1.72	10	3	.0	T	8.9	SSE	*27	SW	6	5	9	17	7.3	--
Portland	61	1010.3	1014.5	65	44	54.4	2.1	78	4	29	3	0	2	49	82	6.34	2.98	1.80	14	1	.0	0	9.4	S	30	S	6	7	7	17	6.9	55
MARYLAND																																
Baltimore (U)	14	------	------	73	56	64.6	-.7	87	16	46	2	0	0	--	--	7.23	3.22	2.80	11	--	---	--	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1008.8	1013.8	72	51	61.6	-1.3	84	20+	37	2	0	0	52	74	7.10	3.09	3.64	13	5	.0	0	9.6	WNW	37	W	21	7	8	16	6.6	55
Frederick	294	------	------	70	48	59.0	-4.9	84	21	32	2	0	1	--	--	4.31	.71	1.48	14	--	.0	0	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.(R)	629	------	------	68	48	57.9	----	79	6+	37	2	0	0	--	74	3.34	-.16	.82	14	--	0	0	11.9	S	32	ENE	21	--	--	--	----	49
Boston	15	1009.1	1013.8	67	52	59.7	1.9	83	6	43	2	0	0	49	73	3.80	.89	1.06	13	1	.0	0	11.0	ESE	26	NNW	2	7	8	16	6.8	54
Nantucket	43	1013.9	1014.6	60	47	53.5	1.2	71	20	38	1	0	0	48	84	1.76	-1.15	.83	9	5	0	0	11.8	WSW	26	W	15+	6	5	20	7.5	54
Pittsfield	1170	------	------	68	45	56.6	2.3	80	27	30	3+	0	2	--	--	3.23	-.53	.62	16	--	0	0	----	---	--	---	--	--	--	--	----	--
Worcester	986	977.3	1014.0	67	48	57.4	1.4	78	19+	33	2	0	0	44	68	5.59	2.23	1.63	15	4	0	0	8.2	W	*22	W	15	6	7	18	7.0	--
MICHIGAN																																
Alpena	689	986.5	------	64	42	52.9	.7	80	5	26	2	0	2	45	72	4.29	1.36	1.58	15	2	.0	0	8.0	E	28	NE	11	2	11	18	7.5	39
Detroit (City AP)	619	984.8	1011.5	67	50	58.4	.6	82	15	35	10	0	0	46	68	2.87	-.74	.92	17	2	T	T	10.6	S	28	W	15	3	7	21	7.8	40
Detroit (M. Wayne Co.)	630	987.5	1011.4	67	48	57.6	----	82	20+	33	1	0	0	48	72	2.76	----	.88	15	2	T	0	10.9	W	--	---	--	3	8	20	8.0	--
Detroit (Willow Run)	722	982.7	1011.0	68	49	58.4	.2	83	20	33	10	0	0	47	71	1.97	-1.47	.55	14	3	5	T	12.0	SW	*35	SE	17	4	7	20	7.7	--
Escanaba (U)	594	988.8	------	58	43	50.4	.6	75	15	27	1	0	1	--	79	7.02	4.42	1.82	16	4	T	2	12.1	---	50	N	6	8	8	15	6.4	49
Flint	761	983.4	1011.3	66	46	56.0	.2	80	15+	32	8	0	1	47	74	1.72	-1.67	.55	15	2	0	0	9.8	ESE	*24	SW	7	3	6	22	8.0	--
Grand Rapids	681	985.8	1010.9	67	46	56.7	.4	81	5	32	8	0	1	45	69	3.82	.37	.89	13	5	.0	0	10.2	WNW	34	S	7	3	10	18	7.3	52
Lansing	852	979.0	1011.0	67	46	56.4	-.1	81	15	32	8+	0	2	47	75	3.05	-.70	.64	16	3	T	T	12.9	SSE	38	SW	7	4	7	20	7.7	50
Marquette (U)	677	985.4	------	56	41	48.5	-1.1	77	16	27	1	0	7	--	73	7.70	5.06	1.98	14	2	9.4	4	7.8	NW	26	NW	7	6	7	18	7.0	54
Muskegon	627	987.8	1010.8	66	46	55.8	1.5	80	5	33	13+	0	0	46	73	4.02	1.20	1.15	17	3	T	0	10.0	W	*25	SSW	3+	10	3	18	6.5	--
Sault Ste. Marie	721	989.2	1011.9	61	42	51.6	2.7	77	16	31	1	0	2	43	75	5.32	2.77	1.46	14	0	T	T	9.4	ESE	*29	NE	9	4	9	18	7.4	42
MINNESOTA																																
Duluth	1409	973.2	1013.2	60	40	50.4	.7	78	31+	27	3	0	8	37	68	4.37	1.20	1.36	11	4	T	0	12.3	E	39	E	3	6	7	18	6.9	55
Intern'l Falls	1179	971.9	1013.4	65	40	52.3	1.4	82	31+	19	3	0	7	36	58	1.84	-.69	1.20	7	1	T	T	8.1	NE	*24	SSE	18	9	7	15	6.2	--
Minneapolis	830	978.0	1011.4	68	46	57.0	-1.5	84	14	28	8	0	4	44	66	3.19	.07	.89	14	5	T	0	10.6	N	29	N	9+	5	9	17	6.9	46
Rochester	1017	973.9	1011.1	67	46	56.8	.0	80	14	29	12	0	4	46	71	6.53	3.15	1.62	14	6	T	0	11.4	SE	--	---	--	5	7	19	7.3	--
St. Cloud	1034	973.9	1011.8	67	44	55.3	.1	83	14	28	1	0	5	40	63	4.29	1.19	1.73	10	3	T	0	---	---	--	---	--	6	7	18	6.8	--
MISSISSIPPI																																
Jackson	305	1002.3	1014.4	82	58	69.9	-2.4	93	31	42	13+	5	0	57	67	3.95	-.14	2.83	6	7	0	0	6.6	SSE	34	NW	20	10	15	6	1.7	73
Meridian	292	1000.9	1014.8	82	56	68.8	-2.7	93	31+	38	13	10	0	57	71	6.50	2.51	2.66	6	7	0	0	6.9	SSW	*25	NE	6+	12	13	6	1.8	--
Vicksburg (U)	234	1005.2	------	80	61	70.7	-2.2	89	31+	45	12	0	0	--	--	4.51	.29	2.10	6	7	.0	0	7.7	---	29	NW	11	11	15	5	4.5	79
MISSOURI																																
Columbia	778	982.4	1010.9	75	51	62.8	-.8	88	24	34	1	0	0	47	67	4.19	-.65	1.91	11	6	0	0	11.1	WSW	42	NW	26	11	12	8	4.9	73
Kansas City	741	976.6	1011.2	76	55	65.6	.1	90	23	39	1	1	0	48	56	2.83	-1.58	.87	11	4	0	0	9.9	SSW	42	NW	19	9	11	11	5.7	77
St. Joseph	809	976.6	------	75	52	63.6	-.9	89	24	35	1	0	0	--	--	2.30	-1.77	.87	12	7	.0	0	12.9	S	*35	NNW	6	13	9	9	4.8	--
St. Louis (RFC)	465	------	------	72	54	63.2	-3.0	85	23	40	10+	0	0	--	--	3.71	-.39	1.09	12	--	0	0	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
MISSOURI (Cont'd.)																																
St. Louis	552	991.5	1012.0	73	53	62.7	-2.7	85	25	36	1	0	0	51	68	4.72	0.70	1.65	13	6	0.0	0	10.8	WNW	39	SE	20	8	12	11	5.7	54
Springfield	1265	965.1	1012.5	71	51	62.9	-.7	88	23	32	1	0	1	50	67	4.21	-.81	1.64	9	9	.0	0	12.1	SSE	42	W	19+	9	9	13	5.5	60
MONTANA																																
Billings	3567	888.3	1011.3	70	43	56.4	.4	94	12	32	6	1	1	33	48	1.31	-.49	.84	9	2	T	0	11.3	SW	43	NW	13	6	9	16	6.5	68
Butte	5530	828.0	1014.6	59	32	45.0	-1.9	82	12	21	18	0	22	28	--	1.20	-.60	.28	11	1	5.0	2	8.9	S	*32	WNW	29+	0	6	25	8.5	--
Glasgow	2277	937.4	1010.6	68	43	55.2	-.3	95	12	32	6	1	1	35	52	1.43	-.12	.52	10	4	T	T	----	---	--	---	--	4	10	17	7.0	--
Great Falls	3664	885.5	1011.9	63	41	52.3	-1.5	89	12	27	6	0	2	31	50	1.71	-.22	.53	11	4	1.7	1	10.3	SW	38	SW	17+	5	9	17	7.2	53
Havre (U)	2488	923.1	1011.9	67	42	54.4	-1.3	91	12	28	6	1	1	--	--	1.19	-.29	.32	12	2	T	0	9.3	⦶ SW	36	SW	17+	8	5	18	6.7	56
Helena	3893	871.0	1013.0	63	38	50.5	-1.8	88	12	30	9+	0	3	32	53	.94	-.66	.34	7	3	T	T	9.8	W	40	W	16	1	12	18	7.9	66
Kalispell	2965	------	------	62	38	50.2	-2.2	80	12+	28	9	0	4	--	--	3.34	1.71	.79	18	3	T	T	----	---	--	---	--	1	9	21	8.1	--
Miles City	2629	927.5	1011.7	73	45	58.7	1.6	96	12	33	4	2	0	35	--	1.32	-.39	.62	11	4	.0	0	11.6	SE	*44	NNW	21	5	10	16	6.8	--
Missoula	3200	900.4	1015.1	63	36	49.7	-3.9	85	12	22	22	0	7	37	66	1.41	-.23	.39	15	0	T	T	7.1	NW	34	NW	27	2	4	25	8.4	46
NEBRASKA																																
Grand Island	1841	945.5	1011.0	72	47	59.7	-1.4	86	24	35	8	0	0	46	62	4.07	.20	1.95	11	8	T	0	13.1	N	--	---	--	11	7	13	5.2	--
Lincoln (U)	1166	------	------	73	51	62.0	-.5	89	24	38	12+	0	0	--	--	4.35	1.25	1.72	10	8	.0	0	12.0	⦶ NW	48	S	3	12	9	10	5.0	70
Norfolk	1544	955.3	1010.4	71	47	58.6	-.5	87	31	33	8+	0	0	44	59	5.93	2.30	2.11	10	9	.0	0	----	---	--	---	--	11	6	14	5.8	--
North Platte	2779	912.3	1010.5	72	43	57.5	-1.4	87	31	29	1	0	2	43	63	2.29	-.38	.92	8	[illegible]	.0	0	13.5	N	47	S	24+	10	8	13	5.7	63
Omaha	978	971.2	1010.9	74	51	62.2	-.5	86	31	36	8	0	0	47	61	6.53	3.78	1.40	11	10	.0	0	13.2	NNW	49	NW	20	10	9	12	5.7	66
Omaha N.Omaha AP	1323	963.1	------	71	49	60.4	-.2	84	31	34	1	0	0	--	—	6.42	3.67	1.88	12	11	.0	0	----	---	--	---	--	7	12	12	6.0	--
Scottsbluff	3950	876.4	1010.8	72	42	57.2	1.0	88	31+	29	1	0	3	40	60	2.04	-.60	.66	8	6	T	0	12.4	SE	*46	WNW	24	9	10	12	6.0	--
Valentine	2587	920.8	------	71	43	56.9	-.1	92	13	29	11	1	2	--	62	4.08	1.42	1.55	12	10	.0	0	12.0	⦶ N	43	W	24	11	9	11	5.3	65
NEVADA																																
Elko	5075	842.9	1013.1	68	34	51.1	-1.9	89	11	20	19	0	14	26	42	.50	-.45	.20	7	1	1.7	2	6.7	SW	*31	WSW	20	5	13	13	6.6	--
Ely	6257	807.0	1011.3	68	32	50.3	-1.4	83	31+	17	19	0	18	22	38	.79	-.39	.51	4	3	2.6	1	10.4	S	42	SW	21	3	10	18	6.9	85
Las Vegas	2162	943.4	1007.8	89	58	73.4	-.7	103	11	47	20	15	0	21	16	T	-.16	T	0	0	.0	0	12.3	SW	*39	SW	21	19	7	5	3.4	92
Reno	4404	860.8	1014.0	71	33	51.7	-3.6	87	31+	19	22	0	15	27	40	T	-.48	T	0	1	T	0	7.9	WNW	36	W	28	13	10	[illegible]	5.0	87
Winnemucca	4299	866.6	1014.2	71	35	52.9	-3.0	89	11	19	19	0	10	26	40	.60	-.24	.35	6	0	1.0	1	8.1	W	57	W	12	5	10	16	6.5	52
NEW HAMPSHIRE																																
Concord	339	1003.2	1014.1	71	46	58.3	3.5	85	27+	29	3	0	1	49	75	4.00	.96	1.22	14	2	.0	0	6.7	SE	24	E	8	6	10	15	6.8	52
Mt. Washington Obs.	6262	810.0	------	47	35	41.2	5.9	61	29	15	2	0	6	--	--	13.41	8.09	3.39	15	1	5.7	1	22.5	---	‡75	E	24	8	5	18	6.8	50
NEW JERSEY																																
Atlantic City (U)	30	------	------	67	54	60.3	1.2	83	16	42	2	0	0	--	--	2.32	-.66	.53	17	--	----	--	10.2	---	31	N	1	--	--	--	----	55
Atlantic City	58	1011.5	1014.0	71	51	61.0	.8	84	16	37	3	0	0	51	73	2.21	-.77	.68	15	5	.0	0	11.1	ESE	24	WNW	16	5	10	16	6.7	--
Newark	11	1012.5	1013.9	71	53	62.2	1.1	83	17+	40	2	0	0	50	67	4.11	.38	1.01	15	4	.0	0	8.8	ESE	*30	W	24	7	8	16	6.6	--
Trenton (U)	56	1006.1	------	72	52	62.3	.5	83	16	41	2	0	0	—	--	2.10	-1.38	.49	13	5	.0	0	8.2	---	28	S	9	[illegible]	[illegible]	15	6.4	67
NEW MEXICO																																
Albuquerque	5310	846.3	1009.0	78	51	64.7	-.6	90	13	37	20	1	0	27	28	.71	-.16	.39	3	3	.0	0	8.5	SE	38	NW	2	15	11	5	4.3	80
Clayton	4969	842.9	1009.1	78	45	61.0	1.1	91	13	33	1	1	0	--	--	.49	-2.10	.27	4	5	.0	0	----	---	--	---	--	10	11	10	5.1	--
Raton	6379	803.6	1009.8	73	38	55.5	-.2	84	12	26	2	0	6	--	--	.19	-1.98	.04	5	8	T	T	----	---	--	---	--	7	13	11	5.8	--
Roswell	3612	889.3	1008.1	88	50	69.0	.9	99	14	37	21+	15	0	31	28	1.03	-.25	1.01	3	3	.0	0	12.8	---	66	NW	19	13	14	4	3.9	--
Silver City	5371	832.0	1009.1	81	46	63.4	----	93	11	35	20+	3	0	--	--	.02	----	.02	1	0	.0	0	----	---	--	---	--	20	11	0	2.2	--
NEW YORK																																
Albany	277	1009.4	1013.3	72	41	60.4	2.9	84	27	31	2	0	1	48	67	3.33	.53	.69	15	3	.0	0	8.4	SSE	29	W	16+	3	8	20	7.7	46
Binghamton	1590	953.3	1012.8	65	49	56.8	1.9	78	27+	33	2	0	0	47	73	4.45	.58	.89	17	5	.0	0	7.4	SSE	37	E	7	4	5	22	8.1	32
Buffalo	693	984.5	1012.6	67	49	58.1	2.7	85	27+	34	2	0	0	48	75	4.05	1.58	.94	18	1	T	0	9.5	SW	30	SW	[illegible]	4	[illegible]	21	7.8	40
New York (U)	10	1012.4	------	68	54	61.0	.2	80	27	42	2	0	0	--	--	3.75	.24	.92	13	4	.0	0	10.8	---	47	NW	16	8	8	15	6.4	55
New York	19	1011.9	1014.0	71	54	62.6	1.3	81	26+	44	2	0	0	50	68	3.39	.06	.92	13	4	.0	0	11.3	S	40	NW	16	5	8	18	6.6	--
Rochester	543	993.2	1012.4	68	50	58.7	2.3	85	6	30	2	0	1	48	72	3.72	1.08	1.31	15	3	.0	0	9.3	WSW	41	W	1	4	5	22	7.8	43
Schenectady	217	------	------	72	51	61.6	3.5	87	27	36	2	0	0	--	--	3.06	.08	.62	16	--	.0	0	----	---	--	---	--	12	10	9	5.0	--
Syracuse	424	990.6	1012.4	69	50	59.8	2.1	84	27	36	2	0	0	48	69	3.96	1.06	.83	18	1	.0	0	9.3	SE	36	SE	8	4	6	21	7.9	42
NORTH CAROLINA																																
Asheville (U)	2203	935.3	------	73	49	61.1	-2.3	87	24	34	14+	0	0	--	--	2.11	-.92	.86	8	[illegible]	T	0	7.7	---	26	SE	7	[illegible]	15	7	5.0	66
Cape Hatteras (R)	7	1012.8	1013.3	75	61	68.2	.0	84	29+	50	2	0	0	61	80	5.61	1.68	2.37	8	12	.0	0	10.9	SW	30	SSW	27+	9	14	8	5.2	68
Charlotte	725	985.7	1013.6	81	55	67.9	-.4	94	25+	38	13	9	0	53	62	3.51	.53	2.49	6	5	.0	0	9.4	SSW	29	NW	24	11	12	[illegible]	4.9	75
Greensboro	891	982.3	1014.2	77	53	64.7	-1.6	91	21	38	13	1	0	52	67	4.68	1.04	1.58	10	5	.0	0	7.6	WSW	40	NW	26	[illegible]	15	7	5.1	75
Raleigh	433	999.8	1013.6	78	54	66.1	-1.2	91	21	40	13	2	0	54	68	5.07	1.67	2.21	10	5	.0	0	7.9	S	*29	WNW	25	10	16	5	5.0	66
Wilmington	30	1012.0	1013.3	82	60	70.8	.8	94	25+	49	9	7	0	60	72	5.52	2.09	3.20	9	6	.0	0	10.5	SSW	31	SW	23	10	14	7	4.9	79
Winston-Salem	967	978.6	1013.7	78	54	65.9	-.8	92	21	38	13	3	0	50	61	7.21	3.28	3.33	10	5	.0	0	9.2	WSW	*46	NW	24	11	12	8	4.9	--
NORTH DAKOTA																																
Bismarck	1650	952.6	1012.4	70	42	56.2	1.4	88	22+	28	11+	0	4	37	54	2.89	.95	1.52	[illegible]	3	2.8	T	12.8	SSE	66	NW	25	[illegible]	[illegible]	14	6.2	77
Devils Lake (U)	1471	959.0	------	67	42	54.3	1.3	86	13	24	3	0	7	--	59	4.11	1.98	1.64	11	5	1.0	1	8.3	⦶ SE	28	NW	31	7	12	12	6.1	69
Fargo	895	978.3	1012.7	71	42	56.6	1.6	88	31	26	11+	0	8	38	54	1.71	-.46	.69	9	2	.2	T	15.3	N	72	NW	31	8	11	12	6.0	61
Williston (U)	1877	944.1	1011.7	68	44	55.9	1.3	93	12	31	7	1	3	36	51	1.73	.07	.70	7	3	.0	0	8.2	⦶ SE	31	NW	13	5	9	17	6.7	60
OHIO																																
Akron	1210	974.6	1012.6	66	48	57.1	-1.4	82	20	34	2	0	0	48	74	3.15	-.60	.95	14	4	T	0	10.8	S	--	---	--	2	8	21	7.9	--
Cincinnati Obs.	761	------	------	72	51	61.4	-2.2	86	20	36	8	0	0	--	--	3.42	-.12	.78	17	6	.0	0	5.5	---	34	SW	20	--	--	--	----	49
Cincinnati	869	980.9	1012.8	71	51	60.9	-1.6	88	20	35	8	0	0	48	68	3.22	-.23	.63	17	6	.0	0	9.1	SSW	*33	WSW	20	4	7	20	7.4	--
Cleveland	787	983.8	1011.8	66	47	56.8	-2.3	80	5	33	2	0	0	45	74	3.56	.83	.94	15	6	.0	0	11.6	S	31	W	17	3	9	19	7.7	54
Columbus (U)	724	------	------	69	52	60.4	-1.8	86	20	38	10	0	0	—	--	4.21	.98	1.61	12	7	.0	0	----	---	--	---	--	--	--	--	----	--
Columbus	815	982.4	1012.3	69	50	59.4	-1.4	85	20	37	2	0	0	50	74	5.82	1.85	1.48	16	7	.0	0	8.1	WNW	37	WSW	20	4	9	18	7.6	41
Dayton	1002	976.0	1012.3	68	50	59.0	-2.0	83	20	34	9	0	0	48	72	3.66	.12	1.00	15	5	T	0	10.7	WNW	43	W	17	4	[illegible]	18	7.6	52
Mansfield	1296	------	------	66	49	57.2	----	83	20	33	10	0	0	--	--	3.31	----	.70	15	2	T	0	----	---	--	---	--	2	[illegible]	21	8.0	--
Sandusky (U)	603	989.4	------	68	51	59.4	.1	84	5	35	10	0	0	--	--	3.46	.14	.89	17	4	T	0	8.2	---	42	W	17	6	9	16	6.5	57
Toledo	676	986.2	1011.6	68	47	57.3	-.9	83	20+	32	8	0	1	49	76	3.11	.16	1.18	15	4	T	0	8.5	WSW	35	SW	6	3	[illegible]	20	7.9	44
Youngstown	1178	969.9	1012.4	66	47	56.1	-2.2	82	20	34	1	0	0	47	74	4.57	.48	1.16	15	4	.0	0	10.9	SSE	*35	SW	17	4	5	22	8.1	--
OKLAHOMA																																
Oklahoma City	1280	968.8	1012.0	77	56	66.5	-1.5	90	16	39	1	1	0	54	69	6.79	2.54	2.00	11	10	.0	0	13.2	SSE	72	SE	4	13	10	8	5.0	65
Tulsa	672	987.5	1012.1	77	54	65.8	-2.4	89	25	35	1	0	0	55	71	8.91	4.14	3.18	8	10	.0	0	8.7	SSE	48	SW	19	10	11	10	5.4	52
OREGON																																
Astoria	8	1016.3	1016.7	58	44	51.0	-2.5	70	9	37	22	0	0	46	82	6.60	3.07	1.61	24	2	.0	0	9.2	SW	*24	SW	30	0	3	28	9.0	--
Burns (U)	4140	872.0	1014.9	63	35	49.0	-5.1	82	11+	22	22	0	14	33	60	1.61	.86	.31	10	3	.3	T	----	---	--	---	--	2	11	18	7.5	--
Eugene	361	1003.7	1017.4	64	43	53.6	-2.8	79	30	34	22	0	0	--	--	4.44	2.45	1.11	19	2	.0	0	7.6	---	*28	WNW	20	1	6	24	8.4	--
Meacham	4050	------	------	54	36	44.6	-3.4	76	11	26	22	0	13	--	--	4.83	2.46	.95	21	1	17.6	4	----	---	--	---	—	0	8	23	8.5	--
Medford	1312	969.2	1016.8	68	43	55.1	-3.6	84	31+	35	22+	0	0	42	66	1.97	.75	.42	14	0	.0	0	5.8	WNW	*28	WNW	20	3	11	17	7.5	--
Pendleton	1492	961.1	1014.8	68	44	55.9	-3.9	86	10	34	22	0	0	41	61	1.57	.60	.66	12	1	T	T	12.1	W	*41	W	16	1	11	19	8.0	--
Portland	21	1010.8	1016.4	62	46	54.0	-3.6	79	9	33	22	0	0	45	73	3.37	1.61	.82	20	3	T	T	7.4	S	42	SW	23	0	1	30	9.1	35
Roseburg	505	998.6	1017.3	66	43	54.8	-2.0	82	30+	34	22	0	0	--	--	3.80	2.07	1.11	17	3	.0	0	4.6	⦶ N	21	NW	20	1	8	22	8.4	41
Salem	195	1009.8	1017.1	63	42	52.5	-4.7	75	30	31	22	0	1	46	81	3.59	1.66	.58	20	3	.0	0	6.2	S	*23	SW	23	0	5	26	8.7	--
Sexton Summit (R)	3836	883.2	1016.6	54	36	44.7	-5.8	73	30	27	21+	0	11	--	--	5.56	3.61	2.48	17	0	4.7	1	10.5	S	--	---	--	3	6	22	8.0	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb.	°F.	°F.	°F.	°F.	°F.		°F				°F.	%	In.	In.	In.			In.	In.	M p.h.		M p.h.			0–3	4–7	8–10	0–10	%
PACIFIC AREA																																
Canton Island	8	1008.5	1008.8	90	79	84.7	0.5	93	31+	73	19	21	0	75	77	2.31	-0.55	0.98	13	2	0.0	0	14.3	E	*32	NE	7	0	5	26	9.2	—
Guam (R)	361	------	------	87	73	79.9	.1	89	11	62	2	0	0	--	--	5.69	1.65	1.01	23	0	.0	0	7.2	E	2	E	23	--	--	--	----	[illegible]
Johnston Is.	7	1013.9	1014.6	83	75	79.0	---	85	28+	71	12+	0	0	70	75	1.04	----	.25	16	0	.0	0	15.0	---	26	E	15+	0	21	10	6.8	86
Koror (R)	94	1005.8	1009.8	88	76	82.0	.7	90	30+	72	15	5	0	77	86	11.45	-2.70	3.11	25	1	.0	0	4.4	E	24	S	15	0	2	29	9.5	43
Ponape (R)	120	1004.1	1009.5	86	74	80.3	-1.2	89	31+	72	15+	0	0	76	87	22.08	2.42	3.78	28	3	.0	0	4.2	E	20	E	26+	0	1	30	9.5	42
Truk, Moen Is.	5	1009.5	1009.8	87	76	81.3	.4	89	19+	74	24+	0	0	76	84	14.15	1.25	2.85	25	2	.0	0	5.6	NE	24	NE	14	0	4	27	9.1	42
Wake Island	55	1014.2	1014.6	86	76	80.9	1.5	88	31	73	28+	0	0	72	75	.95	-1.36	.30	11	1	.0	0	13.2	ENE	*25	ENE	22	9	14	8	5.4	--
Yap (R)	53	1007.1	1009.1	88	76	82.0	-.3	91	4	72	29	7	0	76	83	12.70	3.55	3.08	24	2	.0	0	5.5	NE	25	E	18	0	4	27	9.0	62
PENNSYLVANIA																																
Allentown	376	999.7	1014.0	70	48	58.8	-1.7	81	16	35	4+	0	0	50	75	3.60	-.37	.72	14	5	.0	0	9.5	W	*35	SW	9	7	7	17	6.7	--
Erie	732	------	1012.0	65	49	56.6	1.5	82	21+	37	2	0	0	47	73	3.66	.47	1.19	16	3	T	T	12.0	SSE	*32	SSE	7	1	10	20	8.0	--
Harrisburg	335	999.5	1013.3	69	50	59.9	-2.5	82	16	39	3+	0	0	48	69	7.41	3.71	2.69	17	5	.0	0	6.8	W	30	W	21	3	8	20	7.6	43
Philadelphia (U)	35	------	------	73	55	63.7	.0	85	16	42	3	0	0	--	--	----	--	---	--	--	--	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1009.0	1013.4	72	51	61.2	-1.9	83	16	35	2	0	0	51	71	3.65	.07	.71	14	7	.0	0	7.9	WSW	30	NW	17	6	7	18	6.9	48
Pittsburgh (U)	749	------	------	69	52	60.9	-1.7	87	20	39	11+	0	0	--	--	4.88	1.39	2.30	15	--	.0	0	----	---	--	--	--	--		--	----	40
Pittsburgh	1151	982.6	1013.2	67	48	57.5	-2.3	86	17	31	2	0	1	46	70	5.62	1.85	2.18	13	2	.0	0	8.3	SE	*35	WNW	17	3	4	24	8.3	47
Reading (U)	266	1001.3	------	70	52	60.9	-1.6	84	16	39	2	0	0	--	--	5.32	1.63	1.65	15	6	.0	0	9.7	--	33	E	22	6	7	18	7.0	47
Scranton	940	979.2	1013.6	68	48	57.7	-1.2	84	27	35	10+	0	0	47	70	4.32	.21	.77	20	5	.0	0	8.0	SW	25	NW	16	5	5	21	7.5	45
Williamsport	527	994.3	1013.4	67	48	57.5	-2.7	80	16	32	2	0	1	47	73	7.24	2.93	2.22	20	6	.0	0	8.7	W	*28	E	8	5	6	20	7.6	--
RHODE ISLAND																																
Block Island	110	1009.1	------	61	49	55.1	.9	72	16	41	2	0	0	--	--	4.37	1.41	1.11	12	1	.0	0	----	---	--	---	--	8	7	16	6.4	--
Providence	55	1008.1	1014.3	68	49	58.5	1.7	82	20	39	2	0	0	49	73	3.79	.77	1.43	11	3	.0	0	9.3	S	*22	SSW	20	7	8	16	6.3	56
SOUTH CAROLINA																																
Charleston (U)	9	------	------	81	64	72.6	-.3	93	23	52	9	6	0	--	--	1.45	-1.91	1.06	5	--	.0	0	10.8	---	38	NW	25	--	--	--	----	--
Charleston	41	1012.5	1014.4	84	61	72.2	.8	96	18	48	14+	8	0	58	66	2.26	-1.50	1.42	7	5	.0	0	9.3	SW	36	N	25	12	12	7	4.9	81
Columbia	217	1000.7	1013.4	84	57	70.8	-.9	98	18	42	13	13	0	54	60	1.47	-1.76	.93	6	5	.0	0	7.6	SW	29	SW	26	13	11	7	4.4	78
Florence	146	1007.2	1012.9	84	56	70.7	-.6	96	18	46	9	11	0	55	63	1.49	-2.29	.43	9	8	.0	0	8.2	SW	*20	SW	9	13	9	9	4.4	--
Greenville	1018	976.7	1013.6	79	55	67.3	-1.2	92	24+	39	13	5	0	49	56	2.16	-1.23	1.52	6	5	.0	0	7.9	WSW	27	SW	9	10	13	8	5.2	74
Spartanburg	801	983.4	1013.6	80	55	67.4	-1.4	95	18	40	13	9	0	51	60	1.99	-1.46	1.30	8	4	.0	0	9.6	SW	*23	SSW	28+	10	13	8	4.8	--
SOUTH DAKOTA																																
Huron	1282	964.4	1011.5	72	42	57.2	-.8	86	24	25	11	0	5	44	65	2.19	-.06	.63	11	7	.0	0	13.5	SSE	50	NW	31	7	11	13	6.4	71
Rapid City	3165	898.4	1012.0	71	43	56.9	2.2	90	12	32	6	1	1	36	52	2.23	-.82	1.40	8	5	.0	0	12.9	NNW	45	NW	8	7	12	12	6.2	57
Sioux Falls	1420	959.7	1011.0	71	45	58.0	-.1	85	31+	31	8	0	3	42	60	5.08	1.70	1.50	10	5	.0	0	12.1	NNW	*31	NNE	16	7	8	16	6.2	--
TENNESSEE																																
Bristol	1519	959.9	1013.9	75	51	62.9	-1.3	89	20	39	14	0	0	49	64	2.06	-1.38	.87	7	4	.0	0	7.8	WSW	*30	WSW	27	4	14	13	6.4	--
Chattanooga	670	986.4	1013.9	78	51	64.7	-3.0	92	20	35	9	5	0	51	65	1.09	-3.07	.56	6	3	.0	0	7.7	S	33	W	26	10	14	7	5.4	70
Knoxville	950	978.8	1014.0	77	55	65.9	-1.5	90	24	41	14+	1	0	50	59	1.12	-2.46	.54	6	5	.0	0	8.2	WSW	36	SW	21	6	15	10	5.8	56
Memphis (U)	271	------	------	77	60	68.5	-2.0	90	23	43	12	1	0	--	--	4.36	.71	1.97	7	--	.0	0	----	---	--	---	--	--	--	--	----	--
Memphis	263	998.7	1013.4	79	58	68.5	-1.6	91	24+	44	12	3	0	54	62	4.20	.28	1.71	7	7	.0	0	9.1	SSW	45	W	20	10	11	10	5.2	78
Nashville	577	993.3	1013.2	78	54	65.7	-2.5	92	24	37	9	3	0	53	68	3.16	-.62	2.02	9	8	.0	0	7.8	S	42	NW	26	10	13	8	5.5	70
Oak Ridge	905	1015.3	------	76	51	63.5	-2.5	91	24+	38	9	2	0	--	--	1.97	-2.21	.82	6	4	.0	0	5.5	---	‡36	---	27+	12	10	8	4.9	--
TEXAS																																
Abilene	1759	950.6	1010.5	85	59	72.3	.6	105	14	40	2	12	0	53	57	1.93	-1.75	.99	4	5	.0	0	11.6	SSE	37	S	23	14	12	5	4.2	76
Amarillo	3590	885.5	1009.3	81	50	65.1	1.3	95	13	36	1	3	0	39	47	.82	-2.19	.42	9	7	.0	0	13.3	SW	42	SE	27	12	8	11	5.2	80
Austin	615	990.9	1012.4	84	63	73.5	-1.7	91	28+	47	13+	7	0	61	69	.81	-3.56	.33	7	3	.0	0	11.0	SSE	34	NW	20	8	13	10	5.6	66
Brownsville	16	1009.1	1011.9	85	69	76.9	-2.0	92	20	53	8	6	0	68	78	1.78	-1.31	1.48	3	1	.0	0	13.1	SSE	40	E	20	8	14	9	5.5	55
Corpus Christi	41	1011.9	1013.0	82	67	74.9	-2.5	88	26	55	8	0	0	67	80	1.93	-1.48	.79	5	3	.0	0	12.8	SSE	31	SE	15	5	13	13	5.9	63
Dallas	487	993.9	1012.4	83	62	72.4	-1.3	94	25	42	12	8	0	57	62	2.23	-2.74	.80	5	6	.0	0	13.0	S	49	SE	4	8	15	8	5.0	70
Del Rio (U)	957	------	------	90	66	77.6	.2	100	14	53	[illegible]	19	0	--	--	.51	-1.96	.32	2	4	.0	0	----	---	--	---	--	--	--	--	----	--
El Paso	3920	883.2	1008.5	87	60	73.7	2.1	96	27+	47	1	14	0	28	20	.04	-.37	.04	1	0	.0	0	13.8	WSW	43	NW	5	21	8	2	2.5	90
Fort Worth	544	992.2	1012.4	83	61	72.0	-1.3	95	25	42	1	6	0	58	65	1.89	-3.03	.66	7	7	.0	0	14.1	S	*40	SSE	16+	8	15	8	5.2	--
Galveston (U)	7	------	------	78	70	73.5	-2.2	83	27	56	12	0	0	--	--	.26	-2.94	.12	6	--	0	0	12.8	---	32	SE	3	--	--	--	----	73
Galveston	5	1011.9	1014.1	79	68	73.7	-2.2	85	31+	56	12	0	0	63	72	.34	-3.15	.15	5	3	.0	0	12.0	SE	--	---	--	7	15	9	5.8	--
Houston (U)	41	1008.5	------	83	66	74.8	-1.1	91	27	52	12	2	0	--	--	.88	-3.96	.49	6	2	.0	0	11.5	⊕ S	32	SE	18	7	15	9	5.4	77
Houston	50	1010.5	1013.5	83	65	73.9	-.8	92	28	53	13+	3	0	62	72	.90	-4.01	.47	7	2	.0	0	13.3	SSE	--	---	—	7	12	12	5.8	--
Laredo	500	995.3	1010.5	93	69	81.2	.0	108	15	58	8+	24	0	61	57	1.41	-1.77	1.20	4	2	.0	0	11.3	SE	*35	NW	17+	13	12	6	4.5	--
Lubbock	3243	900.1	1009.8	85	52	68.9	1.1	100	14	33	2	15	0	42	45	1.16	-2.20	.64	6	6	.0	0	15.0	SW	*46	NNE	28	13	15	3	4.1	--
Midland	2854	912.0	1009.2	87	58	72.3	-1.0	102	13	40	2	15	0	40	39	1.55	-.52	1.15	4	5	.0	0	13.1	SSE	*38	NW	5	19	7	5	3.5	--
Port Arthur	16	1012.2	1013.8	82	63	72.9	-1.5	90	31+	50	13+	2	0	64	74	.55	-3.85	.49	3	1	.0	0	12.6	SSE	30	SE	14+	5	17	9	5.7	72
San Angelo	1903	944.1	1010.4	89	58	73.5	-.1	107	14	36	12	19	0	53	58	2.05	-.91	.93	5	5	.0	0	12.1	S	*35	ESE	29	16	9	6	4.1	
San Antonio	792	987.5	1012.2	84	64	74.1	-1.9	92	28+	48	13+	9	0	62	70	1.21	-2.31	.44	8	4	.0	0	10.5	SE	30	NW	20	9	13	9	5.5	62
Victoria	110	1007.8	1012.7	83	65	74.1	-3.3	90	27	51	8	1	0	64	72	2.11	-1.91	1.15	6	4	.0	0	12.1	SSE	‡45	NNE	11	8	11	12	6.0	--
Waco	500	991.5	1012.6	84	62	73.3	-1.2	92	28	45	12	8	0	59	64	2.38	-1.77	1.47	6	5	.0	0	15.6	SSE	*46	W	25	8	14	9	5.1	--
Wichita Falls	1020	974.6	1011.1	83	57	69.8	-.7	96	14	37	1	8	0	55	64	3.02	-.84	1.05	10	13	.0	0	11.1	S	*40	NW	31	11	13	7	4.5	--
UTAH																																
Milford	5028	841.9	1011.9	74	39	56.8	.0	90	11	25	19	1	6	--	--	.48	-.26	.44	3	2	T	T	----	---	--	---	--	8	16	7	5.2	--
Salt Lake City	4220	865.2	1012.0	74	44	58.7	-.2	92	12	31	19	2	1	33	44	.73	-.83	.43	4	3	1.0	T	8.5	SSE	35	S	21	6	17	8	5.7	80
Wendover	4237	867.9	1009.8	73	49	61.1	---	93	12	38	18	3	0	--	--	.08	----	.05	3	2	T	0	----	---	--	---	--	10	14	7	5.2	--
VERMONT																																
Burlington	331	998.4	1013.1	71	50	60.9	5.5	83	28+	38	2	0	0	48	67	3.64	.75	1.25	13	3	.0	0	7.1	SSW	28	S	7	3	8	20	7.6	55
VIRGINIA																																
Lynchburg	947	979.8	------	74	52	63.0	-2.0	91	21	38	2	1	0	--	--	6.02	2.93	3.47	10	6	.0	0	8.0	---	27	SW	30	11	10	10	5.3	68
Norfolk	26	1012.3	1013.8	77	59	68.3	2.4	90	21	43	3	1	0	55	66	4.43	.98	1.38	13	10	.0	0	10.2	ENE	36	NE	17	9	13	9	5.5	63
Richmond	162	1007.6	1014.0	77	53	64.9	-.9	91	21	40	3	1	0	54	71	3.59	-.05	.87	10	5	.0	0	8.8	E	28	NE	21	6	13	12	6.2	68
Roanoke	1174	971.6	1013.6	75	52	63.2	-1.5	91	21	35	13	3	0	49	33	5.91	2.29	2.92	12	6	.0	0	8.9	SE	--	--	-	10	8	13	5.8	--
WASHINGTON																																
Olympia	190	1008.5	1016.0	63	42	52.1	-2.0	81	9	31	22	0	2	45	77	3.50	1.84	.78	19	2	.0	0	7.9	SW	*39	WNW	16	0	8	23	8.5	—
Seattle (U)	14	------	------	62	49	55.4	-1.9	80	9	42	22	0	0	--	--	2.66	1.05	.61	20	--	.0	0	----	---	36	SW	30	--	--	--	----	26
Seattle	14	1014.6	1015.7	--	--	----	---	--	--	--	--	--	--	46	73	----	----	----	--	--	---	--	7.5	S	--	---	--	--	--	--	----	--
Seattle-Tacoma	386	1002.0	1016.3	61	45	52.7	-2.4	76	9	37	22	0	0	45	79	3.04	1.40	.66	19	4	.0	0	10.3	S	*29	WSW	16	0	5	26	8.6	--
Spokane	2357	944.8	1013.9	62	40	51.2	-3.5	82	11	31	22	0	1	39	65	2.73	1.69	.79	16	1	T	T	9.8	SSW	32	SW	13	1	8	22	8.1	53
Stampede Pass(R)	3958	877.4	1016.6	45	34	39.4	-5.1	63	11	27	21+	0	16	--	--	9.12	4.38	1.63	26	0	31.2	66	---	---	--	---	-	0	5	26	9.2	-
Tatoosh Island(R)	101	1012.5	1015.4	55	47	50.8	-.1	62	9	43	21+	0	0	45	80	6.10	2.79	1.37	20	0	.0	0	14.3	WSW	41	E	9	0	4	27	8.9	23
Walla Walla (U)	949	978.3	1013.9	68	48	57.7	-3.5	85	10	38	22	0	0	--	--	2.27	1.01	.87	14	0	T	T	6.3	⊕ W	26	W	16	4	8	19	7.5	64
Yakima	1061	975.3	1014.3	69	40	54.2	-4.9	86	10	27	22	0	3	37	54	.87	.40	.26	10	1	T	0	8.4	WNW	*35	SW	21	2	9	20	7.9	--
WEST INDIES																																
San Juan, P.R.(U)	47	------	------	86	75	80.2	1.5	90	24	73	21+	1	0	--	--	5.03	-1.48	1.47	16	7	.0	0	----	---	-	--	--	--	--	--	----	--
San Juan, P.R.	15	1012.1	1014.9	88	72	80.0	1.4	92	28+	69	17	6	0	71	79	7.09	.51	2.90	20	7	.0	0	9.0	ENE	26	SE	8	1	18	12	6.6	49
Swan Island	33	1009.6	------	88	79	83.1	1.0	90	21	74	8	1	0	--	--	4.40	.15	1.07	12	6	.0	0	----	---	--	---	--	0	15	16	7.8	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature								No. of days			Average relative humidity	Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile			No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
WEST VIRGINIA																																
Chalreston	950	977.8	1013.2	72	50	61.0	-2.7	88	26+	32	2	0	1	49	67	2.74	-1.04	1.08	14	5	0.0	0	6.3	SW	*27	SW	22	4	10	17	7.3	--
Elkins	1970	------	------	--	--	----	---	--	--	--	--	--	--	46	--	----	----	----	--	--	---	--	6.8	SSE	--	---	--	--	--	--	----	--
Huntington (U)	567	------	------	74	51	62.4	-3.3	90	26	35	2	1	0	--	--	2.98	-.84	1.03	12	--	.0	0	---	---	--	---	--	--	--	--	----	--
Parkersburg (U)	615	------	------	71	51	60.9	-2.6	89	20	32	2	0	1	--	--	3.06	-.44	1.12	14	7	.0	0	5.6	---	25	W	17	5	6	20	7.4	41
WISCONSIN																																
Green Bay	689	988.2	1011.1	63	43	53.1	-1.3	80	15	29	1	0	5	45	77	7.75	5.22	2.43	17	3	2.6	1	11.0	NE	50	S	2	6	8	17	6.9	39
La Crosse	652	985.8	1010.3	68	49	58.8	-.2	81	15	32	7	0	1	48	69	8.83	5.56	2.72	17	8	.8	T	10.8	SE	*52	SSW	2	7	3	21	7.4	--
Madison	857	975.3	1010.6	65	45	55.2	-2.3	79	31	27	12	0	4	46	73	6.26	2.99	2.58	17	5	T	0	10.6	N	38	SE	16	6	9	16	7.1	43
Milwaukee	672	986.5	1011.6	61	43	51.8	-2.5	79	31	30	13	0	1	44	78	4.27	1.29	1.23	16	2	.4	T	12.2	NNE	34	N	10	5	12	14	6.8	50
WYOMING																																
Casper	5319	834.4	1009.8	69	38	53.6	.5	87	12	30	20+	0	5	29	45	.56	-1.76	.35	6	4	T	T	12.2	WSW	*36	WSW	13	5	11	15	6.9	--
Cheyenne	6131	809.3	1010.1	70	42	55.7	5.6	85	12	32	6+	0	2	34	50	.96	-1.50	.36	9	7	T	T	13.3	WNW	38	N	15	5	15	11	6.3	69
Lander	5563	832.4	1008.1	69	40	54.5	2.1	86	12	28	19	0	3	28	41	.78	-1.79	.71	3	1	T	T	8.1	⦶ SW	43	SW	16	6	15	10	6.2	70
Sheridan	3942	881.5	1011.4	70	40	54.9	2.0	95	12	32	20+	1	2	34	51	.83	-1.81	.26	7	3	T	0	8.7	NW	54	NW	21	10	10	11	5.7	70

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

⦶ Wind direction to 8 compass points only.

¢ City Office Data.

† Airport Data.

‡ Peak Gust.

HEATING DEGREE DAYS

(Base 65°F.)

MAY 1960

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	72	3093	2780
Mobile	32	2087	1612
Montgomery	43	2516	2137
ALASKA			
Anchorage	483	10233	10450
Annette	476	6526	6775
Barrow	1363	19831	19061
Barter Island	1256	19897	
Bethel	667	13410	12508
Cold Bay	779	9423	
Cordova	579	8781	9144
Fairbanks	378	13903	13965
Juneau	470	8095	8546
King Salmon	655	10919	
Kotzebue	937	15682	15500
McGrath	519	14290	14107
Nome	760	13963	13510
St. Paul	960	10442	10134
Yakutat	572	8365	8889
ARIZONA			
Flagstaff	440	7001	7313
Phoenix (U)	0	1293	1492
Phoenix	0	1451	1698
Prescott	154	4356	4516
Tucson	5	1908	1776
Winslow	114	4582	4694
Yuma	0	859	951
ARKANSAS			
Ft. Smith	62	3824	3188
Little Rock	64	3543	2982
Texarkana	37	3543	2362
CALIFORNIA			
Bakersfield	31	1921	2115
Bishop	119	3938	4184
Blue Canyon	482	5087	5517
Burbank	41	1273	1786
Eureka (U)	356	4198	4350
Fresno	54	2392	2532
Los Angeles (U)	24	913	1432
Los Angeles	55	1260	1959
Mt. Shasta (R)	468	4584	5739
Oakland	174	2432	3044
Red Bluff	91	2479	2546
Sacramento (U)	74	2216	2595
Sacramento	68	2403	2815
Sandberg (R)	282	4042	4187
San Diego	45	1006	1531
San Francisco (U)	243	2405	2889
San Francisco	202	2489	3257
San Jose (U)	139	2014	2364
Santa Maria	256	2501	2782
COLORADO			
Alamosa	484	8739	8456
Colorado Springs	310	6711	6179
Denver	245	6222	6067
Grand Junction	156	5753	5773
Pueblo	167	6085	5682
CONNECTICUT			
Bridgeport	202	5395	5858
Hartford	156	6160	6108
New Haven	214	5575	5974
DELAWARE			
Wilmington	144	4915	4904
DIST. OF COLUMBIA			
Washington (U)	110	4319	4258
Washington	103	4270	4333
FLORIDA			
Apalachicola (U)	7	1569	1307
Daytona Beach	4	905	868
Fort Myers	0	489	405
Jacksonville	2	1442	1243
Key West	0	115	77
Miami	0	256	178
Miami Beach	0	150	123
Orlando	0	755	650
Pensacola (U)	20	1802	1435
Tallahassee	21	1763	1519
Tampa	0	689	674
West Palm Beach	0	351	248
GEORGIA			
Athens	78	3440	2800
Atlanta	71	3227	2826
Augusta	35	2823	2138
Columbus	44	2679	2396
Macon	33	2582	2049
Rome	108	3686	3138
Savannah	15	2276	1710
IDAHO			
Boise	327	6807	5798
Lewiston	315	5866	5415
Pocatello	359	7288	6840
ILLINOIS			
Cairo (U)	97	4010	3756
Chicago	221	6361	6252
Moline	203	6913	6319
ILLINOIS (Cont'd.)			
Peoria	233	6641	6046
Springfield	190	6075	5661
INDIANA			
Evansville	164	5095	4354
Ft. Wayne	237	6458	6234
Indianapolis	214	6027	5581
South Bend	259	6684	6462
IOWA			
Burlington	187	6658	6067
Des Moines	153	7181	6401
Dubuque	259	7730	7195
Sioux City	161	7716	6958
KANSAS			
Concordia (U)	104	6101	5303
Dodge City	123	5642	5043
Goodland	225	6682	6309
Topeka	115	5913	5194
Wichita	97	5195	4564
KENTUCKY			
Lexington	174	5141	4964
Louisville	151	4742	4434
LOUISIANA			
Baton Rouge	15	1956	1595
Lake Charles	9	1976	1543
New Orleans (U)	11	1554	1175
New Orleans	26	1764	1317
Shreveport	23	2743	2117
MAINE			
Caribou	262	8918	9972
Greenville (U)	149	8598	
Portland	321	7085	7564
MARYLAND			
Baltimore (U)	84	4263	4203
Baltimore	135	4792	4782
Frederick	195	5345	4854
MASSACHUSETTS			
Blue Hill Obs. (R)	215	6252	
Boston	166	5454	5749
Nantucket	349	5648	5963
Pittsfield	252	7167	7589
MICHIGAN			
Alpena	370	8350	7938
Detroit	219	6330	6344
Detroit(Willow Run)	219	6403	6414
Escanaba (U)	446	8301	8491
Grand Rapids	254	6885	6996
Lansing	271	7116	
Marquette (U)	507	8416	8340
Muskegon	283	6949	6973
S. Ste. Marie	410	9006	9251
MINNESOTA			
Duluth	446	9746	9759
Internat. Falls	388	10406	10429
Minneapolis	247	8096	7773
Rochester	253	8158	8003
St. Cloud	295	9024	8787
MISSISSIPPI			
Jackson	49	2863	2202
Meridian	59	2890	2333
Vicksburg (U)	36	2701	2000
MISSOURI			
Columbia	129	5622	5099
Kansas City	86	5361	4880
St. Joseph	107	6122	5322
St. Louis (RFC)	126	5060	4462
St. Louis	129	5254	4688
Springfield	133	5169	4677
MONTANA			
Billings	287	7041	6987
Glasgow	310	9077	8577
Great Falls	409	7567	7389
Havre (U)	334	8141	8088
Helena	446	8282	8053
Kalispell	452	9023	7840
Miles City	231	7882	7744
Missoula	466	8177	7697
NEBRASKA			
Grand Island	185	7183	6272
Lincoln (U)	131	6686	5833
Norfolk	210	7857	7005
North Platte	242	7385	6487
Omaha	119	7011	6128
Scottsbluff	253	7979	6760
Valentine	268	7926	6992
NEVADA			
Elko	425	7351	7152
Ely	447	7604	7243
Las Vegas	4	2462	2425
Reno	405	6079	5871
Tonopah	249	5259	5722
Winnemucca	368	6734	6358
NEW HAMPSHIRE			
Concord	201	6836	7530
Mt. Washington Obs.	732	12406	
NEW JERSEY			
Atlantic City (U)	157	4731	4717
Newark	114	4844	5241
Trenton (U)	106	4880	5057
NEW MEXICO			
Albuquerque	82	4192	4389
Clayton	141	5463	5114
Roswell	28	3919	3424
NEW YORK			
Albany	152	6610	6912
Binghamton	253	6908	7449
Buffalo	235	6452	6766
New York (U)	138	4935	5032
New York	98	4754	4979
Rochester	212	6776	6809
Schenectady	127	6214	7010
Syracuse	176	6579	6483
NORTH CAROLINA			
Asheville (U)	181	4557	4067
Cape Hatteras (R)	27	2676	2392
Charlotte	72	3517	3205
Greensboro	112	4253	3810
Raleigh	87	3867	3369
Wilmington	21	2803	2323
Winston-Salem	105	4080	3721
NORTH DAKOTA			
Bismarck	290	8887	8917
Devils Lake (U)	339	10239	9803
Fargo	276	9344	9173
Grand Forks	281	9896	
Pembina	311	9965	
Williston (U)	292	9037	8930
OHIO			
Akron	260	6359	6153
Cincinnati (U)	48	4963	4532
Cincinnati	187	5361	5172
Cleveland	265	6106	5960
Columbus	205	5675	5584
Dayton	213	5918	5558
Sandusky (U)	204	6028	5818
Toledo	244	6547	6334
Youngstown	284	6443	6119
OKLAHOMA			
Oklahoma City	73	4255	3644
Tulsa	88	4205	3584
OREGON			
Astoria	428	5062	4773
Burns (U)	488	7205	6759
Eugene	347	4706	4654
Meacham	625	7802	7561
Medford	299	4635	4478
Pendleton	284	5594	5153
Portland (U)	287	4259	4073
Portland	337	4902	4539
Roseburg	314	4414	
Salem	384	4949	4483
Sexton Summit (R)	623	6323	5947
PENNSYLVANIA			
Allentown	193	5606	5855
Harrisburg	171	5243	5344
Philadelphia (U)	84	4534	4523
Philadelphia	129	4878	4866
Pittsburgh (U)	173	5034	5035
Pittsburgh	250	6061	5869
Reading (U)	142	4970	5049
Scranton	221	6264	6012
Williamsport	229	5870	5873
RHODE ISLAND			
Block Island	298	5459	5747
Providence	196	5724	6067
SOUTH CAROLINA			
Charleston (U)	5	2203	1769
Charleston	12	2398	1973
Columbia	38	2936	2435
Florence	29	2853	2507
Greenville	87	3542	3060
Spartanburg	85	3558	3044
SOUTH DAKOTA			
Huron	259	8711	7822
Pierre	227	8228	
Rapid City	262	7468	7387
Sioux Falls	233	8424	7768
TENNESSEE			
Bristol	144	4548	4148
Chattanooga	129	3863	3384
Knoxville	108	4027	3590
Memphis	69	3587	3137
Nashville	121	4223	3513
TEXAS			
Abilene	40	3048	2657
Amarillo	80	4774	4345
TEXAS (Cont'd.)			
Austin	12	2145	1713
Brownsville	0	720	617
Corpus Christi	1	1233	1011
Dallas	33	2793	2272
Del Rio (U)	1	1770	
El Paso	10	2514	2641
Ft. Worth	32	2855	2361
Galveston (U)	3	1573	1211
Galveston	2	1660	1233
Houston (U)	2	1656	1276
Houston	1	1748	1388
Laredo	4	1120	781
Lubbock	57	4025	3587
Midland	28	3056	
Port Arthur	6	1913	1517
San Angelo	31	2764	2107
San Antonio	7	1949	1579
Victoria	3	1571	1126
Waco	13	2464	2025
Wichita Falls	52	3454	3025
UTAH			
Milford	264	6376	6368
Salt Lake City	227	6149	5785
VERMONT			
Burlington	147	7516	7793
VIRGINIA			
Lynchburg	146	4517	4148
Norfolk	37	3565	3454
Richmond	88	4210	3955
Roanoke	142	4553	4152
WASHINGTON			
Olympia	392	5465	5318
Seattle (U)	291	4279	4331
Seattle-Tacoma	373	5131	5120
Spokane	420	7315	6706
Stampede Pass (R)	788	9245	8711
Tatoosh Island (R)	436	5338	5394
Walla Walla (U)	236	5214	4810
Yakima	331	6339	5792
WEST VIRGINIA			
Charleston	177	4809	4409
Huntington (U)	157	4606	4068
Parkersburg (U)	183	5094	4737
WISCONSIN			
Green Bay	365	8192	8152
La Crosse	196	7562	7576
Madison	296	7793	7335
Milwaukee	402	7435	7096
WYOMING			
Casper	349	7695	7492
Cheyenne	288	7261	7389
Lander	322	7952	8140
Sheridan	315	7749	7742

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

MAY 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS
Alabama	4	2	0	1	5	0	0	2	0					0	0	4	0												
Alaska																												4	
Arkansas	16	5	1	41	6				3		2	5	3			4													
California	1	1	0	0	0					0	1	3	4																
Colorado	7	4	0	0	4	0	1	4	5																	0	0	3	3
Florida	1	1	0	0	0					0	0	4	0																
Georgia	2	2	0	0	4	0	0	3	4	0	0	3	0	0	0	4	0												
Idaho											2	3																	6
Illinois	11	4	0	0	5	0	0	D	D	0	0	A4	D	1	2	D	0												
Indiana	3	3	0	0	4	0	0	1	0	0	0	4	0	0	4	5	0												
Iowa	4	3	0	0	5	0	0	4	4	0	0	4	0													0	0	4	0
Kansas	26	9	1	91	7	0	0	6	6	0	0	3	0	0	0	3	0									0	1	0	0
Kentucky								4	3		1	5			1	3													
Louisiana										0	0	4	0																
Maine																										0	0	2	0
Maryland						0	0	0	D	0	0	4	0	0	0	5	0												
Massachusetts														0	0	4	0									0	0	4	0
Michigan	1	1			3															5									
Minnesota														1	0	0	0									1	0	5	5
Mississippi	2	2	0	2	5	0	0	5	4	0	2	5	4	0	0	4	0												
Missouri	12	5		4	5			2																				4	
Montana										0	0	4	0																
Nebraska	10	5	0	1	5	0	0	5	6	0	0	5	0	0	1	4	0												
Nevada										1		3																	
New Hampshire																										0	0	2	0
New Mexico						0	0	4	5	0	0	4	0																
New York	1	1			4																							4	
North Carolina	2	2	0	1	4	0	0	5	6	0	0	5	4	2	0	4	0									0	0	4	4
North Dakota	3	3	0	0	1	0	0	0	3	0	0	3	3																
Ohio	2	2	0	0	5	0	0	3	0	0	0	4	0																
Oklahoma	61	11	31	241	7	0	1	6	6	1	9	6	0	0	1	5	0									0	0	5	5
Oregon						0	0	2	3	1	0	3	2	0	0	3	2									1	0	4	5
Pennsylvania								5	5			3		2														4	
South Carolina						0	0	2	4	0	0	3	0																
South Dakota	2	2			2							4				4												4	
Tennessee										1	0	4	0	1	1	5	0												
Texas	29	10	0	13	5	0	0	5	5	0	0	5	0	0	0	5	0												
Utah											1	3																	
U. S. Virgin Is.																											S		
Virginia	1	1	0	0		0	D		5	0	0	D	D	0	1	5	0												
Washington															2	3													
West Virginia								4				3				1												4	
Wisconsin	3	1	0	0	0																					0	0	5	0
Wyoming	1	1	0	1	4	0	0	0	2																				

° Includes crop damage
A Additional occurred; estimates not available.
D Occurred; estimates not available.
S Several; unconfirmed.
‡ Includes heavy sleet storm.
# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

MAY 1960

The most important flooding during the month occurred in the Upper Mississippi Basin in southern Minnesota. Severe flooding occurred on the Le Sueur River, with high water exceeding the previous record stages of April 1951. Flooding was also severe on the Minnesota River from Mankato downstream and on Sand Creek at Jordan, Minn. Considerable flooding occurred on the South Fork of the Solomon River in the Missouri Basin with stages in the vicinity of Morland, Kans., the highest since 1934. A major rise occurred in streams in eastern Oklahoma. Flooding reported elsewhere was mostly light.

ST. LAWRENCE DRAINAGE

Lake Ontario.--Light flooding occurred on Canseraga Creek and Genesee River in New York due to heavy rain showers. No significant damage resulted from the overflows.

ATLANTIC SLOPE DRAINAGE

At the beginning of May, the snow cover in Maine ranged from none in the southern portion to as much as 1.5 feet, with water equivalent of 6 inches, on the sheltered slopes in the northern portion of the State. By the 11th of the month, the snow was about all gone. Heavy rains during the second week of the month caused the Androscoggin and Kennebec Rivers to reach near bankfull levels around the middle of the month. The Saco and Penobscot Rivers remained well below their banks. There was no flooding in any of the streams.

Light flooding occurred on the Chemung River at Chemung, N. Y., on the 10th. No damage resulted as only low swampy areas were affected by the slight overflow.

Minor flooding occurred on the North and South Branches of the Potomac River in Maryland and West Virginia on the 8th and 9th from heavy rains. Further downstream at Harpers Ferry, W. Va., bankfull stage was reached on the morning of the 10th. There was some light flooding in the lower Potomac near Washington, D. C., on the 10th and 11th. No damage was reported.

Bankfull stage was reached on the Roanoke River at Randolph, Va., on the 9th from heavy rain on the 7th and 8th. The Neuse River was in flood at Smithfield, N. C., on the 10th and 11th, with a crest of over 3 feet above flood stage. No loss or damage resulted from this overflow.

The light flooding on the Rocky River at Norwood, N. C., on the 9th and on the Broad River at Blair, S. C., on the 9th and 10th was due to heavy rain on the 8th and 9th. The rainfall averaged nearly 2.5 inches over the upper reaches of the Santee System. There was some lowland flooding on the Congaree River below Columbia, S. C., from the 9th to the 11th. The Pee Dee River at Peedee, S. C., reached bankfull stage on the 13th and 14th from the rainfall on the 11th and 12th. Damage was light and consisted mostly of flooded swampland pasture below Columbia.

The lower Savannah River at Clyo, Ga., receded within its banks on the 12th, after having been in flood since January 9. Heavy rains caused it to rise again above flood stage on the 14th and it continued in flood until the 22d. No damage resulted from the flooding.

EAST GULF OF MEXICO DRAINAGE

The flooding on the Pearl River in the reach between Jackson, Miss., and Pearl River, La., between the 6th and 15th was due to heavy rains on the 4th, 5th, and 6th. Rapid rises of 9 to 13 feet occurred within 36 hours following the rains. Sport and commercial fishing was curtailed in the local salt water areas adjacent to the coast. Substantial damages occurred in the Honey Island area between Bogalusa, La., and the coast.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--Torrential rains fell over south-central Minnesota on the 20th and 21st, following a wet 4-day period. The 24-hour rainfall totals ranged from 2 to 10 inches. The previous 24-hour rainfall record of 4.05 inches at Jordan, Minn., on June 20, 1956, was exceeded with a total of 5.71 inches. The excessive rain area was centered over the Jordan-New Prague area, the Le Sueur River, and the upper reaches of the Blue Earth River. The hardest hit community was Jordan, Minn. Sixty percent of the town of 1,500 was flooded by Sand Creek and 115 families were evacuated. Severe flooding occurred on the Le Sueur River with high water exceeding the previous record stages of April 1951. The water from the Jordan and the Le Sueur-Blue Earth Rivers which drain into the Minnesota River produced lowland flooding on the Minnesota River near Mankato, Minn., to its entrance into the Mississippi River near St. Paul, Minn. Flood stage was exceeded by 2 feet at Mankato to 7 feet at Savage, Minn. Thousands of acres of surrounding farmland were flooded in the rain areas as well as along the Minnesota River. Hundreds of homes and businesses had water in their basements causing much water damage. Many roads, bridges, culverts, and railroad beds were washed out. The flooding on the Black River near Galesville, Wis., on the 9th and on the Wisconsin River between the 6th and 15th was due to heavy showers and thundershowers from the 5th to the 7th. The rain changed to snow late on the 7th and 8th, with some snow accumulation reaching 6 inches.

Precipitation on the 8th and 9th was mixed rain and snow. The total storm precipitation over the Wisconsin and Black River Drainages averaged from 3 to 5 inches. The snow accumulation on the 7th and 8th helped to slow down the runoff. The crest on the Wisconsin River at Portage, Wis., was the second highest crest of record. Additional rains on the 11th to the 17th produced another rise on the Wisconsin River, with some light flooding at Merrill, Wis.

The heavy rains on the 6th, 7th, and 8th in northeastern Iowa, southern Wisconsin, and northern Illinois produced widespread flooding on streams in Iowa, Wisconsin, and Illinois. Rainfall amounts ranged generally from 2 to 5 inches. The heaviest flooding occurred on the Turkey River at Garber, Iowa, with a crest of 21.0 feet, 10 feet above flood stage on the 7th. Another smaller rise occurred at this point on the 17th and 18th. Heavy rains on the 20th and 21st caused additional flooding in streams in Iowa and Illinois. Very little damage resulted from the May flooding, as crops had not been planted and most of these areas had been flooded previously. Some portions of the Illinois River had been above flood stage for more than 2 months.

The main stem of the Mississippi in the reach between Muscatine, Iowa, and Chester, Ill., began overflowing between the 8th and 10th. In the reach above the mouth of the Illinois River to Clarksville, Mo., the Mississippi had been in flood since March 29 and was still in flood at the end of May. Heavy rains in the Missouri and Upper Mississippi River Basins during the first week of May produced sufficient runoff to cause the Mississippi River at Cape Girardeau, Mo., to slightly exceed flood stage for a very short period.

Missouri Basin.--Minor flooding occurred on the Floyd River at James, Iowa, on the 21st and 22d and on the 26th and 27th. These overflows were due to rainfall ranging from 0.75 inch to 3 inches. No damage was reported.

Locally heavy rains on the 24th and 25th produced some overflow locally on the Little Sioux River in northwestern Iowa. Some local overflow occurred in the Middle Loup Basin around Loup City, Nebr., early in the morning of the 5th. Wiggle Creek, north of Loup City, Nebr., overflowed its banks and a few farms were affected.

Considerable flooding occurred on the South Fork of the Solomon River with stages in the vicinity of Morland, Kans., reportedly the highest since 1934. Rainfall in the area east of Hoxie, Kans., was reported to range from 4.5 to 8 inches and fell in less than 2 hours. Flooding occurred on Stinking Water Creek at Hamlet, Nebr., on the 19th, due to locally heavy rains of 2.75 inches at Wauneta, Kans., ranging to around 4 inches south of Enders Dam. Minor overflows occurred on the local reaches of the Big and Little Blue Rivers in Nebraska, the North Fork of the Solomon, and on the lower Prairie Dog Creek in the Republican Basin in Kansas. Heavy losses were reported to highways and railroad beds as well as to crops. Negligible damage was reported on Stinking Water Creek.

Heavy thundershowers during the night of the 5th and the early morning of the 6th caused flooding on streams in Missouri beginning on the 6th. Around 2.5 inches of rainfall occurred in a short period of time over the Blackwater and Lamine River Basins. The rainfall was not as heavy over the Grand River, but it was sufficient to produce considerable flooding from Chillicothe downstream to Brunswick. The upper reaches of the Grand River remained within its banks. Additional rains during the night of the 15th and the morning of the 16th produced rapid rises on all streams, with some flooding on the lower reaches of the Grand River at Sumner, Mo. Damage from the May flooding was confined to field crops in the lowlands. The damage was considerable because the agricultural levees in most cases had not been repaired from the floods of March and April. Water poured out of river banks over widespread areas in the Sumner and Brunswick, Mo., areas.

The only flooding along the Missouri occurred in the lower reach at Herman and St. Charles, Mo., between the 7th and 13th. The crests averaged about 2.5 feet above flood stage.

Ohio Basin.--The only flooding in the Ohio Basin during May occurred on the Saline River at Harrisburg, Ill., between the 7th and 9th. The overflow was minor and no damage was reported. The flooding was due to showers and thunderstorms on the 6th, which averaged 1.5 inches.

White Basin.--There were two periods of flooding on the Black River at Black Rock, Ark., during May. The first was due to heavy rains on the 4th and 5th, which averaged nearly 4 inches. The second rise was due to generally heavy to locally excessive rains beginning on the 18th. The rains continued into the 20th and caused rises on all streams in the White Basin, with flooding along the Little Red and White Rivers. The damage along the Lower Black River was principally to soybeans. Along the Little Red and White Rivers, cotton, corn, and soybeans were damaged.

Arkansas Basin.--The flooding in the Arkansas Basin during May was due to heavy rains from the 4th to the 7th and from the 18th to the 21st. In general, the area of heaviest rainfall during the first period was in the Little Arkansas and Walnut Basins. Flash flooding occurred on Sand Creek in Newton, Kans., on the 4th and 5th, closing highways in a few places around the Harvey-Marion County line for a short time. The Little Arkansas crested 5.3 feet above flood stage at Sedgwick, Kans., early on the morning of the 5th. Much of the Little Arkansas flow was diverted by the Wichita-Valley Center Flood Control Works and no flooding occurred in Wichita or the surrounding area. Flooding on the San Bois, Brazil, and Gaines Creeks in eastern Oklahoma on the 20th and 21st was of record proportions. Heavy rains on the 29th in central Oklahoma and south-central Kansas caused all streams in that area to rise from half to near bankfull, with some lowland agricultural flooding on the Cimarron River near Dover, Okla.

Red River Basin.--The flooding in the Red River Basin was due to heavy to locally excessive rains beginning on the 18th and continuing into the 20th. The flooding was limited to the upper Ouachita River Basin, with the heaviest overflow occurring on the Caddo River at Glenwood, Ark., where flood stage was exceeded by 7.6 feet on the 20th.

Lower Mississippi Basin.--The Light flooding on the St. Francis River at Fisk, Mo., from the 9th to the 11th was due to rainfall averaging about 2.4 inches above Wappapello Dam on the 5th, 6th, and 7th. Flooding was confined to low areas along the river inside levees and damage was negligible.

WEST GULF OF MEXICO DRAINAGE

Light flooding occurred on the Sabine River at Mineola, Tex., on the 13th and 14th from heavy rainfall on the 5th and 6th. Little or no damage resulted from the overflow.

FLOOD STAGE DATA

(All dates in May unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
ST. LAWRENCE DRAINAGE	Ft.			Ft.	
Lake Ontario					
Canaserage Creek: Groveland, N.Y.	11	23	23	11.4	23
Genesee: Scio, N. Y.	8	23	23	8.3	23
ATLANTIC SLOPE DRAINAGE					
Chemung: Chemung, N. Y.	12	10	10	12.0	10
North Branch Potomac: Cumberland, Md.	17	8	9	17.4	8
South Branch Potomac: Springfield, W. Va.	15	9	9	16.7	9
Potomac: Harpers Ferry, W. Va.	18	10	10	18.0	10
Washington (nr), D. C.	12	10	11	13.6	10
Roanoke: Randolph, Va.	21	9	9	21.0	9
Neuse: Smithfield, N. C.	13	10	11	#16.2	11
Rocky: Norwood, N. C.	16	9	9	16.6	9
Pee Dee: Peedee, S. C.	19	13	14	19.0	13-14
Broad: Blair, S. C.	14	8	9	14.8	9
Savannah: Clyo, Ga.	11	Jan. 9	12	13.1	Jan.18-20
				16.6	Feb. 8
				17.3	Feb.18-20
				17.0	Feb. 29
				17.0	Mar. 5
				17.2	Apr.11-12
		14	22	12.5	19
EAST GULF OF MEXICO DRAINAGE					
Pearl: Jackson, Miss.	18	7	15	20.9	10
Bogalusa, La.	15	6	17	19.1	8
Pearl River, La.	12	8	15	15.2	11
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Le Sueur: Rapidan (nr), Minn.	15	21	25	22.5	22
Minnesota: Mankato, Minn.	19	22	24	20.4	23
Carver, Minn.	18	21	June 5	24.8	26
Chaska, Minn.	17	21	June 5	24.2	26
Savage, Minn.	S698	22	June 6	S705.1	27
Zumbro: Zumbro Falls, Minn.	18	21	23	21.8	22
Theilman, Minn.	38	22	23	40.95	23
Black: Galesville (nr), Wis.	12	9	9	12.2	9
Wisconsin: Merrill, Wis.	11	6	8	11.2	7
		18	19	11.1	19
Wisconsin Rapids, Wis.	12	8	9	12.0	8
Portage, Wis.	17	7	15	19.6	10
Muscoda, Wis.	9	10	15	10.15	12
Turkey: Garber, Iowa	11	7	10	21.0	7
		16	17	12.0	16
Maquoketa: Maquoketa, Iowa	13	7	9	17.1	7
Wapsipinicon: DeWitt, Iowa	10	9	16	11.2	11
Pecatonica: Blanchardville, Wis.	11	7	8	11.9	7
Darlington, Wis.	11	7	8	13.6	7
Martintown, Wis.	11	7	24	16.5	10
Freeport, Ill.	13	10	14	13.8	12
Shirland, Ill.	E10	7	28	13.7	11
Rock: Rockton, Ill.	E10	9	19	10.8	12
Cedar: Charles City, Iowa	9	23	23	9.3	23
Iowa: Marshalltown, Iowa	13	6	9	15.7	7
		26	26	13.8	26
Wapello, Iowa	10	8	14	12.4	10
Skunk: Oskaloosa, Iowa	15	25	28	15.6	26
Raccoon: Jefferson, Iowa	10	27	29	13.45	28
Van Meter, Iowa	13	7	7	14.6	7
Middle: Indianola, Iowa	15	25	25	15.3	25
South: Ackworth, Iowa	15	25	25	19.7	25
Des Moines: Tracy, Iowa	14	7	10	17.6	8
		25	31	17.7	26
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Upper Mississippi Basin (Cont'd.)					
Des Moines (Cont'd.): Eddyville, Iowa	15	7	11	20.2	6
		25	June 1	19.5	27
Ottumwa, Iowa	9	7	10	13.0	7
		25	June 1	12.0	27
Keosauqua, Iowa	15	7	8	16.4	7
Fox: Wayland, Mo.	15	8	8	15.7	9
Sangamon: Riverton, Ill.	13	26	1/	16.5	28
Illinois: Havana, Ill.	14	Mar. 31	10	18.2	Apr. 22
		26	31	14.5	27
Beardstown, Ill.	14	Mar. 30	12	21.8	Apr. 7
		26	1/	15.2	30
Meredosia, Ill.	10	Mar. 30	1/	20.95	Apr. 8
				14.3	30
Kaskaskia: Carlyle, Ill.	21	28	1/	21.6	31
Big Muddy: Murphysboro, Ill.	16	10	10	E16.0	10
Mississippi: Dubuque, Iowa	17	15	18	17.5	17
Clinton, Iowa	16	17	20	16.3	18-19
Dam 14, LeClaire, Iowa	10	16	21	10.5	18
Davenport, Iowa	15	19	20	15.1	19
Muscatine, Iowa	16	10	23	17.4	20
Keithsburg, Ill.	12	8	30	14.6	11
				14.5	21
Burlington, Iowa	15	10	25	16.3	12
				16.4	21
Keokuk, Iowa	16	10	13	16.4	11
Gregory Landing, Mo.	15	9	23	15.8	11
				15.4	19
		25	26	15.1	26
Quincy, Ill.	17	9	31	19.0	13
				18.8	18
				18.7	23
				18.7	27
Hannibal, Mo.	16	8	June 4	18.8	13
				18.8	29
				18.6	23
				18.6	27
Louisiana, Mo.	15	8	June 4	17.3	14
				17.3	20
				17.65	27
Clarksville, Mo.	23	Mar. 29	1/	31.2	Apr. 8
Winfield, Mo.	23	Mar. 29	1	32.1	Apr. 9
Grafton, Ill.	18	9	1/	20.3	27
Alton, Ill.	21	9	15	23.2	13
Chester, Ill.	27	10	15	28.2	13
Cape Girardeau, Mo.	32	14	15	32.1	14
Missouri Basin					
Floyd: James, Iowa	16.	21	22	E17.3	22
		26	27	E17.1	27
Little Sioux: Cherokee, Iowa	17	21	28	20.6	26
Correctionville, Iowa	19	26	28	20.4	27
North Branch Elkhorn: Pierce, Nebr.	12	6	8	13.6	7
North Fork Solomon: Lenora, Kans.	10	15	16	12.0	16
Downs, Kans.	18	18	18	18.3	18
South Fork Solomon: Hill City, Kans.	8	16	16	11.25	16
Big Bow Creek: Stockton, Kans.	9	18	18	9.1	18
Prairie Dog Creek: Woodruff, Kans.	18	16	16	20.65	16
Little Blue: Deweese, Nebr.	6	19	19	8.45	19
Big Blue: Crete, Nebr.	16	21	21	17.9	21
Grand: Chillicothe, Mo.	24	6	9	29.0	8
Sumner, Mo.	26	6	11	32.7	8
		17	17	26.5	17
		21	22	27.95	21
Brunswick, Mo.	12	7	12	17.25	10

FLOOD STAGE DATA

(All dates in May unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.) Missouri Basin (Cont'd.)	*Ft.*			*Ft.*	
Chariton: Novinger, Mo.	20	6	10	24.0	7
Prairie Hill, Mo.	15	Apr. 30 6	1 9	15.2 19.1	30 8
Lamine: Clifton City, Mo.	19	Apr. 30 6	1 7	19.1 28.5	Apr. 30 7
Blackwater: Blue Lick, Mo.	25	2 6	4 11	28.1 30.8	3 9
Sac: Stockton, Mo.	18	6	10	19.4	6
South Grand: Brownington, Mo.	19	2 6	5 11	E22.5 23.95	2 8
Osage: Schell City, Mo.	25	Apr. 30	13	29.6	9
Osceola, Mo.	22	6	8	22.8 22.8	6 8
St. Thomas, Mo.	23	7	10	25.2	8
Missouri: Hermann, Mo.	21	7	13	23.3	8-9
St. Charles, Mo.	25	7	13	E27.5	9
Ohio Basin					
Saline: Harrisburg, Ill.	13	7	9	16.6	8
White Basin					
Black: Black Rock, Ark.	14	8 21	11 26	16.9 18.4	7 21
Little Red: Heber Springs, Ark.	24	21	21	34.5	21
Judsonia, Ark.	30	21	23	34.8	22
White: Batesville, Ark.	23	20	22	25.2	20
Augusta, Ark.	32	24	27	32.3	25
Georgetown, Ark.	21	24	27	22.1	25
Des Arc, Ark.	24	28	29	23.8	27
Clarendon, Ark.	26	27	1/	27.5	June 3
Arkansas Basin					
Little Arkansas: Sedgwick, Ark.	18	4	7	23.3	5
Walnut: Augusta, Kans.	23	5	5	23.5	5

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.) Arkansas Basin (Cont'd.)	*Ft.*			*Ft.*	
Bird Creek: Sperry, Okla.	21	6	7	24.5	6
Verdigris: Inola, Okla.	41	7	8	42.5	8
Neosho: Oswego, Kans.	17	7	7	18.2	7
Illinois: Tahlequah, Okla.	11	6	7	16.5	7
Deep Fork: Dewar, Okla.	18	7 21	17 31	21.2 18.7	11 30
Canadian: Whitefield, Okla.	16	19 20	19 20	17.8 16.8	19 20
Poteau: Poteau, Okla.	24	6 19	6 21	27.2 29.4	6 20
Arkansas: Sallisaw, Okla.	23	21	21	23.1	21
Van Buren, Ark.	22	7 20	8 24	22.7 26.7	8 21
Ozark, Ark.	22	21	22	22.8	22
Red River Basin					
Caddo: Glenwood, Ark.	10	20	21	17.6	20
Ouachita: Arkadelphia, Ark.	17	21	22	18.9	21
Lower Mississippi Basin					
St. Francis: Fisk, Mo.	20	9	11	20.3	10
WEST GULF OF MEXICO DRAINAGE					
Sabine: Mineola, Tex.	14	13	14	14.2	13
Colorado: Wharton, Tex.	26	2	2	26.0	2
Guadalupe: Gonzales, Tex.	20	Apr. 30	2	31.2	30
Victoria, Tex.	21	3	6	23.8	5

* Tentative
E Estimated
1/ Continued at end of month
Highest stage observed
S Above sea level

RAWINSONDE DATA

Average monthly values

ALBANY, N. Y. (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	86	12.4	82	208	2.3
1,000	31	116			202	3.3
950	31	546	11.7	68	187	4.3
900	31	997	10.0	63	196	4.7
850	31	1,471	7.7	65	194	6.4
800	31	1,969	4.9	62	202	6.0
750	31	2,492	2.1	56	203	7.2
700	31	3,047	- .5	51	211	8.0
650	31	3,633	- 3.6	47	209	9.5
600	31	4,265	- 7.2	43	215	10.3
550	31	4,933	-11.2	35	217	10.3
500	31	5,664	-16.3		214	11.5
450	31	6,443	-21.9		215	14.2
400	31	7,305	-28.3	37	210	13.0
350	31	8,249	-35.4		216	15.2
300	31	9,306	-42.9		227	17.1
250	31	10,515	-50.6		251	19.4
200	31	11,951	-55.5		257	22.9
175	31	12,802	-55.6		261	23.3
150	31	13,784	-55.8		260	21.2
125	30	14,943	-55.9		258	18.1
100	30	16,360	-57.0		273	12.8
80	30	17,771	-56.9		262	7.6
60	29	19,596	-55.0		192	1.0
50	29	20,765	-53.3		61	2.5
40	29	22,207	-51.7		79	3.9
30	29	24,078	-50.1		78	7.2
25	27	25,275	-48.8		90	5.4
20	25	26,755	-46.2		67	2.3
15	19	28,654	-43.5		8	3.1
10	11	31,390	-38.7			
7	5	33,813	-34.9			

ALBUQUERQUE, N. MEX. (837 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,619	11.5	45	58	2.5
1,000	30	97				
950	30	538				
900	30	1,003				
850	30	1,489				
800	30	1,999	12.4	34	353	2.7
750	30	2,531	9.3	34	297	6.6
700	30	3,105	5.2	37	282	10.1
650	30	3,698	.6	40	271	12.6
600	30	4,343	- 4.2	38	264	15.7
550	30	5,016	- 9.2	34	262	19.4
500	30	5,753	-14.1		267	22.7
450	30	6,537	-19.9		258	20.4
400	30	7,409	-2[illegible].7		264	24.5
350	30	8,359	-34.0		272	22.0
300	30	9,421	-42.0		274	28.0
250	30	10,630	-50.9		268	35.4
200	30	12,055	-58.5		277	34.8
175	27	12,905	-59.9		290	32.3
150	27	13,866	-61.2		276	34.0
125	27	14,992	-62.8		275	29.9
100	27	16,369	-62.3		285	23.3
80	27	17,744	-62.7			
60	25	19,532	-58.0			
50	24	20,680	-55.8			
40	22	22,097	-53.4			
30	21	23,952	-50.9			
25	20	25,143	-49.1			
20	20	26,613	-47.0			
15	14	28,531	-44.0			
10						
7						

AMARILLO, TEX. (889 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,095	11.1	71	196	4.3
1,000	31	101				
950	31	536				
900	31	998				
850	31	1,475	14.4	53	246	9.9
800	31	1,987	13.2	38	267	11.5
750	31	2,521	9.9	33	278	11.9
700	31	3,096	6.0	33	287	14.0
650	31	3,691	1.6	33	283	14.0
600	31	4,338	- 3.5	34	281	15.9
550	31	5,010	- 8.8	35	276	19.8
500	31	5,751	-14.4	34	273	21.2
450	31	6,538	-20.1		274	26.4
400	31	7,406	-26.5		270	26.8
350	31	8,357	-33.5		270	31.7
300	31	9,421	-41.4		271	35.6
250	31	10,635	-50.1		270	39.1
200	30	12,066	-58.4		267	40.4
175	29	12,905	-59.6		270	41.0
150	29	13,869	-59.8		272	37.9
125	29	15,006	-60.4		271	29.7
100	29	16,390	-61.8		272	20.6
80	29	17,768	-61.8		278	9.5
60	28	19,567	-58.0		199	2.3
50	26	20,721	-55.5		86	1.0
40	23	22,149	-53.0		67	3.5
30	22	24,017	-50.2		72	7.0
25	19	25,205	-48.6		72	7.0
20	14	26,665	-46.4		52	1.9
15						
10						
7						

ANCHORAGE, ALASKA (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	30	7.6	74	174	9.1
1,000	31	87	7.6	71	189	5.6
950	31	508	6.7	62	168	7.4
900	31	953	4.1	64	150	5.6
850	31	1,415	1.0	71	133	4.1
800	31	1,900	- 1.8	72	121	4.9
750	31	2,409	- 4.5	69	110	6.6
700	31	2,952	- 7.2	67	116	7.8
650	31	3,523	-10.7	67	124	8.7
600	31	4,138	-14.7	65	121	10.3
550	31	4,787	-18.8	63	115	10.3
500	31	5,496	-23.4	57	108	11.9
450	31	6,250	-28.8	55	96	11.9
400	31	7,091	-35.1	51	92	12.4
350	31	8,009	-41.9		82	14.4
300	31	9,037	-49.0		78	16.9
250	31	10,218	-53.6		86	16.3
200	31	11,657	-52.0		103	6.6
175	31	12,525	-50.2		100	6.2
150	31	13,533	-49.6		123	5.8
125	31	14,727	-49.9		123	3.7
100	31	16,184	-50.2		125	3.7
80	30	17,642	-50.1		108	4.1
60	29	19,528	-49.6		10[illegible]	5.1
50	29	20,723	-49.4		91	5.1
40	29	22,188	-49.4		92	6.6
30	25	24,081	-49.1		94	10.5
25	23	25,268	-48.9		91	12.4
20	23	26,738	-47.5		89	15.2
15	19	28,668	-44.8		90	22.7
10	8	31,460	-31.2			
7						

ANNETTE, ALASKA (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	37	7.3	85	121	3.1
1,000	31	110	7.4	85	125	4.5
950	31	526	5.3	80	144	8.7
900	31	972	2.5	80	151	11.7
850	31	1,432	- .4	79	161	11.5
800	31	1,914	- 3.6	78	166	12.4
750	31	2,419	- 6.9	74	162	11.7
700	31	2,958	-10.2	68	159	10.3
650	31	3,521	-13.6	61	159	11.9
600	31	4,131	-17.4	56	157	12.4
550	31	4,774	-21.7	53	153	10.9
500	31	5,474	-26.4	45	161	10.9
450	31	6,222	-32.0	41	161	10.9
400	31	7,051	-38.1		164	11.5
350	31	7,958	-44.7		154	14.2
300	31	8,976	-50.1		161	10.9
250	30	10,162	-51.1		152	7.8
200	30	11,623	-48.4		171	3.9
175	30	12,503	-48.0		203	3.3
150	30	13,518	-48.6		163	3.1
125	30	14,715	-49.5		194	3.3
100	29	16,174	-50.4		189	1.0
80	28	17,631	-50.6		150	2.5
60	28	19,506	-50.8		110	2.7
50	27	20,688	-50.6		93	3.9
40	27	22,142	-50.5		90	5.4
30	26	24,016	-50.2		82	7.4
25	23	25,203	-49.8		79	9.1
20	20	26,660	-48.5		81	11.5
15	17	28,563	-46.0		80	14.0
10	11	31,290	-41.7			
7						

ATHENS, GA. (986 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	246	14.1	84	303	1.7
1,000	31	130				
950	31	568	16.6	61	302	6.2
900	31	1,025	14.4	58	282	7.6
850	31	1,506	11.3	60	264	11.1
800	31	2,011	9.0	42	262	14.4
750	31	2,538	6.3	37	263	17.9
700	31	3,105	3.1	35	267	19.2
650	31	3,695	- .3	30	267	20.6
600	31	4,338	- 4.0		267	25.8
550	31	5,011	- 8.7		267	26.4
500	31	5,751	-13.7		266	28.4
450	31	6,535	-19.2		266	28.0
400	31	7,410	-25.4		267	33.4
350	31	8,366	-32.1		264	36.7
300	31	9,436	-40.1		266	41.2
250	31	10,658	-48.7		268	44.9
200	31	12,099	-56.0		270	48.0
175	30	12,939	-58.0		269	49.0
150	30	13,909	-58.4		269	45.3
125	26	15,044	-59.9		271	34.0
100	24	16,423	-62.0		270	26.2
80	24	17,801	-62.3		271	17.1
60	23	19,589	-58.8		269	2.3
50	23	20,744	-55.9		92	2.1
40	22	22,170	-52.8		87	2.1
30	20	24,043	-49.7		68	3.5
25	20	25,243	-48.0		91	1.4
20	19	26,714	-46.2		90	2.1
15	16	28,638	-43.4		85	1.2
10	6	31,399	-39.3			
7						
5						

BARROW, ALASKA (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	8	- 7.4	79	80	9.1
1,000	31	149	- 6.6	81	88	11.9
950	31	552	- 4.1	73	100	11.5
900	31	978	- 4.0	65	98	8.9
850	31	1,429	- 5.1	57	110	7.0
800	31	1,903	- 6.8	53	133	4.9
750	31	2,401	- 9.0	46	157	4.3
700	31	2,938	-11.4	44	186	3.9
650	31	3,496	-14.5	42	202	4.5
600	31	4,106	-18.0	43	203	4.5
550	31	4,745	-21.9	43	230	7.2
500	31	5,447	-26.4	41	240	9.5
450	31	6,190	-31.6	40	247	13.0
400	31	7,024	-37.6		248	16.5
350	31	7,934	-43.3		256	22.3
300	31	8,959	-49.0		257	30.1
250	31	10,148	-51.0		255	24.7
200	31	11,611	-47.7		249	15.0
175	31	12,495	-47.1		254	11.1
150	31	13,517	-47.0		255	8.9
125	30	14,722	-47.3		251	6.2
100	30	16,199	-47.3		245	5.8
80	29	17,671	-46.9		196	2.1
60	26	19,572	-46.6		96	4.1
50	25	20,774	-46.4		111	4.7
40	24	22,251	-46.0		106	6.4
30	24	24,166	-45.3		97	10.5
25	24	25,386	-43.9		97	11.9
20	22	26,883	-42.4		99	13.4
15	19	28,872	-39.8		96	18.5
10	10	31,595	-36.0			
7						
5						

BARTER IS., ALASKA (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	15	- 5.2	92	80	9.9
1,000	31	144	- 5.4	89	88	14.2
950	31	546	- 2.8	82	102	14.8
900	31	978	- 1.5	67	107	10.9
850	31	1,432	- 2.6	58	108	5.6
800	31	1,911	- 4.8	51	95	1.4
750	31	2,407	- 7.2	47	259	1.0
700	31	2,951	-10.0	43	253	3.1
650	31	3,510	-13.3	43	266	4.7
600	31	4,124	-16.9	43	275	6.4
550	31	4,763	-20.9	42	284	8.4
500	31	5,469	-25.8	41	266	11.3
450	31	6,211	-31.0	42	273	14.0
400	31	7,049	-37.2	43	273	15.9
350	31	7,959	-43.5		278	18.1
300	31	8,982	-49.1		280	19.4
250	31	10,171	-50.5		280	21.0
200	31	11,633	-48.6		273	14.0
175	31	12,513	-47.5		283	9.7
150	31	13,532	-47.2		279	8.2
125	31	14,737	-47.3		270	4.7
100	31	16,213	-47.3		277	2.3
80	31	17,689	-46.9			.0
60	30	19,603	-46.0		100	3.1
50	30	20,816	-45.6		103	6.0
40	29	22,306	-45.0		91	7.4
30	29	24,232	-43.8		98	11.1
25	29	25,458	-42.8		95	14.0
20	29	26,954	-40.8		91	17.1
15	26	28,948	-38.9		92	21.6
10	26	31,748	-35.5		89	27.0
7	19	34,212	-32.6		85	28.2
5	8	36,541	-31.3			

BETHEL, ALASKA (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	3.5	88	266	3.3
1,000	31	76			271	3.1
950	31	494	4.9	72	151	1.4
900	31	935	2.7	70	155	3.3
850	31	1,395	- .2	69	142	4.3
800	31	1,878	- 3.0	69	137	6.2
750	31	2,385	- 5.6	65	132	6.4
700	31	2,927	- 8.5	60	135	8.5
650	31	3,495	-11.9	58	121	10.9
600	31	4,108	-15.3	53	122	13.2
550	31	4,757	-19.4	50	121	14.4
500	31	5,464	-24.2	48	119	12.8
450	31	6,218	-29.5	46	121	16.1
400	31	7,056	-35.5	43	112	17.7
350	31	7,974	-41.6		109	19.2
300	31	9,005	-48.2		108	22.9
250	31	10,194	-52.3		89	21.4
200	31	11,641	-50.9		93	15.2
175	31	12,514	-49.0		95	11.5
150	31	13,526	-48.8		123	8.5
125	30	14,726	-49.3		112	11.3
100	29	16,192	-50.0		100	8.7
80	28	17,651	-49.3		101	5.8
60	27	19,539	-48.9		117	7.2
50	25	20,737	-48.8		99	8.0
40	24	22,201	-49.2		92	10.3
30	23	24,081	-49.3		93	13.4
25	20	25,260	-49.4			
20	16	26,714	-48.2			
15	9	28,593	-47.2			
10						
7						
5						

BISMARCK, N. DAK. (953 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	505	7.0	71	80	1.4
1,000	31	108				
950	31	529			62	1.9
900	31	982	10.1	50	185	3.9
850	31	1,456	7.8	49	233	3.7
800	31	1,953	5.0	50	289	4.5
750	31	2,474	1.9	49	298	7.2
700	31	3,031	- 1.6	49	295	10.3
650	31	3,613	- 5.0	45	287	13.0
600	31	4,243	- 8.9	42	284	15.0
550	31	4,905	-13.5	42	284	18.3
500	31	5,630	-18.2	39	272	20.6
450	31	6,403	-23.7	40	265	23.1
400	31	7,259	-30.0	41	265	25.5
350	31	8,196	-37.3		260	27.6
300	31	9,243	-45.3		262	31.3
250	31	10,437	-53.6		254	37.5
200	31	11,852	-57.9		259	36.1
175	31	12,696	-57.1		261	32.1
150	31	13,674	-56.0		266	22.9
125	31	14,836	-55.5		255	17.3
100	31	16,257	-55.6		258	10.5
80	31	17,679	-55.5		265	6.2
60	31	19,520	-53.9		307	2.5
50	30	20,698	-53.0		94	2.1
40	29	22,142	-52.4		77	2.5
30	29	24,009	-51.2		77	4.9
25	26	25,200	-50.3		71	5.8
20	26	26,662	-48.6		76	7.4
15	24	28,556	-45.9		79	7.6
10	21	31,283	-40.8		79	6.8
7	13	33,704	-37.2		98	3.3
5	8	36,049	-32.9			

BOISE, IDAHO (915 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	868	7.5	74	151	2.1
1,000	31	125				
950	31	554				
900	31	1,005	9.7	60	169	1.0
850	31	1,480	8.6	50	277	4.5
800	31	1,979	5.2	50	273	5.1
750	31	2,503	1.5	52	263	7.6
700	31	3,055	- 2.4	52	260	11.7
650	31	3,636	- 6.3	52	255	15.5
600	31	4,261	-10.5	53	248	20.0
550	31	4,921	-14.9	48	249	25.3
500	31	5,641	-19.8	44	254	27.0
450	31	6,411	-25.1	41	245	29.0
400	31	7,262	-31.3	39	246	34.8
350	31	8,194	-38.3		245	36.1
300	31	9,239	-45.3		251	38.1
250	31	10,437	-52.0		256	39.4
200	31	11,864	-56.5		265	36.5
175	31	12,712	-56.4		263	35.4
150	31	13,692	-55.8		264	30.9
125	31	14,853	-55.8		262	25.3
100	31	16,272	-56.7		261	16.5
80	30	17,685	-55.9		256	10.7
60	30	19,522	-54.3		270	3.7
50	28	20,698	-53.9			.0
40	28	22,134	-52.9		25	1.4
30	26	23,999	-51.8		32	1.4
25	25	25,180	-50.8		60	1.7
20	24	26,641	-48.9		34	3.5
15	22	28,540	-46.0		59	4.3
10	8	31,226	-42.5			
7						
5						

BROWNSVILLE, TEX. (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	21.3	92	147	4.9
1,000	31	104	21.6	87	148	8.0
950	31	545	20.2	78	159	18.5
900	31	1,016	19.9	59	163	17.9
850	31	1,507	18.0	52	171	14.4
800	31	2,025	15.9	41	195	8.2
750	31	2,566	13.0	35	217	7.6
700	31	3,147	9.9	32	254	6.8
650	31	3,753	5.5	32	275	9.5
600	31	4,407	.7	31	288	14.4
550	31	5,090	- 4.6	31	283	16.5
500	31	5,843	-10.0	32	279	19.8
450	31	6,644	-15.2		280	25.6
400	31	7,530	-21.4		278	29.7
350	30	8,499	-28.6		276	30.9
300	30	9,586	-37.0		280	36.9
250	29	10,825	-46.0		272	44.1
200	29	12,278	-56.0		269	52.1
175	29	13,118	-61.0		270	51.9
150	29	14,065	-65.6		267	60.4
125	29	15,165	-68.7		272	48.6
100	29	16,493	-71.2		275	25.6
80	28	17,807	-71.1		283	7.8
60	28	19,538	-63.6		83	12.8
50	28	20,669	-58.9		86	13.2
40	26	22,074	-55.2		90	18.7
30	25	23,930	-51.2		85	22.2
25	21	25,119	-49.0		82	25.5
20	17	26,608	-46.0		85	28.2
15	17	28,532	-43.2		84	27.4
10	14	31,301	-38.7			
7	6	33,721	-36.6			
5						

BUFFALO, N. Y. (990 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	182	10.6	87	204	6.4
1,000	31	98				
950	31	524	11.5	73	199	7.0
900	31	978	9.5	70	206	8.4
850	31	1,451	6.7	73	205	9.3
800	31	1,947	3.9	71	215	8.5
750	31	2,466	1.3	68	212	8.5
700	31	3,022	- 1.8	60	210	8.7
650	31	3,603	- 5.3	59	215	11.3
600	31	4,234	- 9.0	54	216	11.9
550	31	4,897	-12.8	46	218	10.7
500	31	5,624	-17.8	43	218	11.5
450	31	6,397	-23.4	43	216	11.1
400	31	7,257	-29.4	40	231	8.7
350	31	8,198	-35.7		235	10.3
300	31	9,254	-42.8		246	12.4
250	31	10,467	-49.2		261	16.1
200	31	11,916	-53.3		269	15.3
175	30	12,773	-55.1		279	16.3
150	30	13,757	-54.9		272	14.2
125	30	14,921	-56.0		264	12.8
100	29	16,338	-57.1		271	8.4
80	29	17,751	-56.8		284	3.7
60	28	19,582	-55.3		333	1.7
50	26	20,749	-53.7		116	4.9
40	25	22,186	-52.3		104	5.2
30	24	24,053	-50.5		82	3.5
25	23	25,248	-49.3		77	4.7
20	21	26,713	-47.3		77	6.2
15	17	28,630	-44.4		73	6.0
10	16	31,363	-40.3		72	3.3
7	11	33,793	-36.3			
5	5	36,064	-33.4			

BURRWOOD, LA. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	3	20.7	87	213	0.6
1,000	31	123	21.1	81	162	1.4
950	31	572	18.6	73	164	4.3
900	31	1,029	16.9	54	180	4.3
850	31	1,515	14.8	48	216	3.7
800	31	2,026	12.5	43	238	6.6
750	31	2,565	9.6	38	250	8.7
700	31	3,133	6.3	35	271	11.3
650	31	3,736	2.7	31	281	15.2
600	31	4,383	- 1.5		276	17.9
550	31	5,061	- 6.1		279	21.4
500	31	5,810	-10.9		281	24.5
450	31	6,609	-16.2		276	28.8
400	31	7,488	-22.7		275	30.5
350	31	8,454	-29.5		276	32.4
300	31	9,537	-37.6		274	37.5
250	31	10,769	-46.9		273	44.7
200	30	12,217	-55.9		275	51.7
175	30	13,058	-59.9		267	55.0
150	30	14,015	-62.5		267	56.2
125	30	15,133	-65.0		269	45.3
100	30	16,486	-67.3		271	31.9
80	30	17,826	-67.6		278	15.0
60	30	19,579	-62.0		97	3.1
50	29	20,719	-57.5		95	8.4
40	29	22,140	-53.6		87	10.7
30	29	24,004	-50.2		83	13.4
25	27	25,202	-48.4		86	17.3
20	26	26,679	-45.9		87	13.4
15	24	28,607	-42.5		82	10.1
10	13	31,429	-38.6			
7						
5						

CAPE HATTERAS, N. C. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	18.3	85		0.0
1,000	31	111	18.6	79	312	1.4
950	31	549	17.1	68	274	4.9
900	31	1,012	14.6	65	264	8.4
850	31	1,493	11.7	65	263	10.3
800	31	1,998	8.5	65	260	11.9
750	31	2,524	5.4	56	260	15.0
700	31	3,090	2.5	48	264	16.7
650	31	3,681	- 1.0	45	264	19.6
600	31	4,321	- 4.6	43	265	21.4
550	31	4,992	- 8.9	40	267	25.1
500	31	5,733	-13.8	32	268	27.8
450	31	6,518	-18.8		270	29.1
400	31	7,394	-24.9		272	29.7
350	31	8,352	-31.6		269	33.6
300	31	9,425	-39.7		266	35.9
250	31	10,647	-49.0		264	38.9
200	31	12,082	-57.2		262	46.4
175	31	12,924	-58.7		265	44.1
150	31	13,891	-59.7		266	36.9
125	31	15,029	-60.5		270	30.1
100	31	16,416	-61.8		273	17.3
80	31	17,796	-61.5		271	9.9
60	30	19,598	-57.8		72	2.1
50	30	20,756	-55.0		80	5.2
40	29	22,192	-52.1		86	5.6
30	28	24,064	-49.6		67	3.3
25	25	25,269	-47.6		83	5.1
20	22	26,747	-45.2		94	2.5
15	19	28,691	-42.9		129	2.5
10	12	31,420	-38.5			
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5						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MAY 1960

CARIBOU, ME. (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	191	9.9	82	102	1.4
1,000--	31	127				
950----	31	555	10.2	67	201	2.5
900----	31	1,003	9.3	62	230	3.5
850----	31	1,476	6.8	61	259	4.1
800----	31	1,972	4.1	60	274	5.1
750----	31	2,493	1.3	58	267	5.8
700----	31	3,048	- 1.8	52	277	7.2
650----	31	3,632	- 5.2	47	282	9.1
600----	31	4,260	- 8.5	42	276	10.5
550----	31	4,927	-12.5	35	275	12.6
500----	31	5,653	-16.9	31	281	13.4
450----	31	6,434	-22.4		284	14.2
400----	31	7,293	-28.6		280	13.6
350----	31	8,235	-35.7		280	14.4
300----	31	9,290	-43.6		283	18.5
250----	31	10,495	-51.4		284	17.7
200----	31	11,923	-56.8		283	21.0
175----	31	12,770	-56.7		274	20.0
150----	31	13,749	-55.4		291	18.1
125----	31	14,912	-55.5		284	12.4
100----	31	16,334	-55.3		284	9.5
80-----	31	17,760	-54.4		296	6.4
60-----	30	19,604	-52.9		11	2.7
50-----	29	20,782	-51.2		64	5.6
40-----	26	22,232	-50.1		77	4.9
30-----	23	24,116	-48.8		98	7.8
25-----	23	25,313	-47.9		89	7.2
20-----	22	26,783	-46.5		80	8.5
15-----	19	28,689	-43.8		85	9.9
10-----	14	31,433	-39.3		85	14.8
7------	10	33,915	-35.0			
5------	6	36,285	-29.9			

CHARLESTON, S. C. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	13	18.2	81	294	2.3
1,000--	31	128	18.3	74	282	4.1
950----	31	572	18.6	59	276	6.4
900----	31	1,032	16.1	57	268	9.5
850----	31	1,516	12.7	62	259	9.7
800----	31	2,023	9.7	57	259	12.0
750----	31	2,557	6.5	51	263	13.0
700----	31	3,121	3.9	38	263	16.7
650----	31	3,718	.4	35	269	17.9
600----	31	4,358	- 3.6	34	268	20.4
550----	31	5,036	- 8.2		268	22.2
500----	31	5,774	-12.9		265	23.5
450----	31	6,565	-18.2		266	24.1
400----	31	7,442	-23.0		268	27.8
350----	31	8,401	-31.4		266	31.5
300----	31	9,475	-39.5		265	38.7
250----	31	10,700	-48.6		263	45.3
200----	31	12,139	-57.1		263	52.7
175----	31	12,979	-59.5		266	50.9
150----	31	13,942	-60.4		269	45.9
125----	31	15,074	-62.0		271	33.6
100----	31	16,449	-63.8		268	23.1
80-----	31	17,819	-63.4		275	13.2
60-----	31	19,601	-59.4		351	1.4
50-----	31	20,751	-56.0		94	4.3
40-----	30	22,180	-52.5		82	7.2
30-----	30	24,053	-49.0		91	6.2
25-----	28	25,249	-47.7		80	6.6
20-----	28	26,729	-45.9		83	5.2
15-----	26	28,649	-43.4		86	5.4
10-----	23	31,404	-39.2		291	2.3
7------	15	33,862	-35.6		274	5.8
5------	11	36,199	-32.5			

COLD BAY, ALASKA (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	27	3.0	90	190	0.6
1,000--	31	72			243	2.1
950----	31	487	.9	85		.0
900----	31	920	- .7	80	64	1.7
850----	31	1,376	- 2.6	77	79	1.4
800----	31	1,856	- 4.7	70	117	2.7
750----	31	2,361	- 7.3	66	55	4.3
700----	31	2,898	-10.2	64	80	2.9
650----	31	3,465	-13.5	62	130	2.7
600----	31	4,072	-17.0	56	97	2.1
550----	31	4,717	-20.9	50	106	2.9
500----	31	5,419	-25.7	46	97	5.6
450----	31	6,169	-30.9	45	93	4.7
400----	31	7,003	-36.5	45	97	7.0
350----	31	7,918	-42.3		82	6.2
300----	31	8,948	-47.4		119	6.2
250----	31	10,146	-49.5		106	4.1
200----	30	11,596	-48.9		231	3.5
175----	30	12,471	-49.0		213	2.3
150----	29	13,489	-48.8		209	2.9
125----	29	14,691	-49.3		191	2.3
100----	29	16,147	-50.5		182	1.6
80-----	29	17,605	-50.3		152	2.9
60-----	26	19,504	-50.0		117	5.2
50-----	26	20,697	-50.0		103	5.6
40-----	26	22,158	-50.1		99	7.2
30-----	23	24,036	-50.5		100	10.5
25-----	22	25,224	-50.5		99	11.3
20-----	22	26,683	-50.0		91	11.5
15-----	17	28,568	-48.5		88	16.9
10-----	11	31,274	-44.7			
7------	7	33,726	-41.2			
5------	6	36,017	-38.1			

COLUMBIA, MO. (983 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	238	11.7	83	196	2.5
1,000--	31	91				
950----	31	523	13.9	64	236	5.1
900----	31	979	12.1	62	265	9.7
850----	31	1,457	9.4	60	278	12.8
800----	31	1,958	7.0	49	287	13.8
750----	31	2,481	4.8	46	287	13.8
700----	31	3,047	2.1	40	290	15.9
650----	31	3,636	- 1.3	41	294	16.9
600----	31	4,276	- 5.1	36	298	18.7
550----	31	4,944	- 9.7	36	299	19.2
500----	31	5,684	-14.5	38	295	19.0
450----	31	6,467	-20.2		289	19.6
400----	31	7,337	-26.3		286	19.6
350----	31	8,288	-33.4		288	21.4
300----	31	9,353	-41.5		286	22.9
250----	31	10,566	-50.3		282	27.8
200----	31	11,999	-56.6		275	34.6
175----	31	12,843	-57.9		272	34.6
150----	31	13,816	-57.5		275	28.8
125----	31	14,968	-57.7		269	23.3
100----	31	16,374	-58.7		268	16.3
80-----	31	17,774	-58.9		280	8.9
60-----	31	19,585	-57.1		313	1.6
50-----	31	20,743	-55.3		68	1.7
40-----	30	22,172	-53.0		70	4.9
30-----	30	24,037	-50.5		70	4.5
25-----	28	25,230	-49.4		53	4.7
20-----	27	26,693	-47.5		41	2.7
15-----	23	28,618	-44.6		317	3.1
10-----	10	31,354	-41.0			
7------						
5------						

DAYTON, OHIO (978 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	297	11.1	79	203	2.9
1,000--	31	107				
950----	31	537	11.7	72	223	7.4
900----	31	989	9.6	71	257	13.0
850----	31	1,462	7.2	70	267	14.2
800----	31	1,959	4.4	68	266	15.3
750----	31	2,482	1.8	62	269	17.7
700----	31	3,036	- 1.3	56	267	17.1
650----	31	3,625	- 4.2	50	271	17.7
600----	31	4,252	- 7.7	42	271	19.2
550----	31	4,921	-11.7	36	274	21.4
500----	31	5,648	-16.3	34	273	22.0
450----	31	6,426	-21.9	37	273	22.5
400----	31	7,290	-27.9	33	269	23.1
350----	31	8,237	-34.5		269	23.9
300----	31	9,298	-41.6		270	29.7
250----	31	10,513	-49.0		272	33.0
200----	31	11,959	-54.2		277	33.6
175----	31	12,812	-55.6		274	29.5
150----	31	13,794	-55.9		274	24.1
125----	31	14,952	-56.7		273	18.7
100----	31	16,361	-58.2		276	14.4
80-----	31	17,764	-58.5		274	9.1
60-----	31	19,585	-55.8		34	.6
50-----	30	20,751	-54.0		68	3.3
40-----	30	22,191	-52.1		67	3.9
30-----	27	24,066	-50.0		83	3.7
25-----	27	25,262	-49.1		61	6.2
20-----	20	26,722	-47.4		41	6.4
15-----	16	28,639	-44.3		29	5.2
10-----	9	31,372	-40.2			
7------						
5------						

DENVER, COLO. (836 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,611	5.8	78	205	3.5
1,000--	31	115				
950----	31	545				
900----	31	999				
850----	31	1,473				
800----	31	1,977	10.8	47	251	4.5
750----	31	2,513	7.7	45	287	6.2
700----	31	3,077	3.8	46	299	8.2
650----	31	3,671	- .6	47	304	10.1
600----	31	4,310	- 5.4	44	300	13.0
550----	31	4,978	-10.7	43	300	12.2
500----	31	5,712	-16.1	40	280	13.6
450----	31	6,492	-21.8	35	281	15.9
400----	31	7,354	-28.1		283	16.5
350----	31	8,298	-35.6		279	19.0
300----	31	9,353	-43.7		272	23.5
250----	31	10,556	-52.2		270	29.0
200----	31	11,977	-58.3		271	33.2
175----	31	12,817	-58.9		273	32.6
150----	31	13,786	-58.1		271	29.1
125----	31	14,935	-58.4		272	25.6
100----	31	16,338	-59.2		272	16.5
80-----	29	17,730	-58.6		267	11.3
60-----	29	19,547	-56.3		242	2.9
50-----	29	20,708	-55.5		76	.6
40-----	27	22,137	-54.0		71	2.9
30-----	27	23,991	-52.2		76	4.7
25-----	26	25,175	-51.1		62	3.1
20-----	26	26,633	-49.6		65	3.7
15-----	25	28,535	-46.7		41	1.7
10-----	20	31,256	-42.5		321	3.9
7------	16	33,685	-39.1		279	7.4
5------	6	36,060	-35.3			

DODGE CITY, KANS. (922 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	792	10.8	80	217	3.3
1,000--	31	104				
950----	31	536				
900----	31	992	13.3	63	203	7.2
850----	31	1,473	12.8	54	227	10.1
800----	31	1,981	10.9	44	266	8.9
750----	31	2,514	8.0	39	277	9.5
700----	31	3,083	4.4	36	290	10.7
650----	31	3,677	- .1	38	292	12.0
600----	31	4,317	- 5.2	42	297	14.8
550----	31	4,989	-10.0	39	288	17.5
500----	31	5,722	-15.4	33	281	20.0
450----	31	6,502	-21.0		282	21.6
400----	31	7,370	-27.7		279	22.0
350----	31	8,315	-35.1		276	23.9
300----	31	9,372	-43.0		275	26.8
250----	31	10,579	-51.4		269	33.8
200----	31	12,004	-58.2		265	37.5
175----	31	12,842	-58.9		273	34.6
150----	31	13,811	-58.4		271	27.4
125----	31	14,956	-59.5		267	25.1
100----	30	16,350	-60.5		270	16.7
80-----	28	17,742	-59.8		277	6.8
60-----	27	19,549	-57.3		231	1.7
50-----	26	20,708	-55.4		53	4.5
40-----	25	22,142	-53.4		32	4.5
30-----	23	24,002	-51.6		81	8.4
25-----	23	25,190	-49.8		89	3.7
20-----	23	26,658	-47.6		343	1.6
15-----	18	28,576	-45.5		5	3.3
10-----	14	31,284	-42.0			
7------	6	33,679	-39.5			
5------						

EL PASO, TEX. (879 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,197	17.2	27	299	3.7
1,000--	31	78				
950----	31	522				
900----	31	997				
850----	31	1,485	18.3	25	282	3.9
800----	31	2,002	15.1	28	273	7.4
750----	31	2,539	11.3	30	270	11.5
700----	31	3,116	6.9	32	262	12.4
650----	31	3,714	2.5	30	251	13.2
600----	31	4,362	- 2.1	28	245	18.7
550----	31	5,039	- 7.3	31	247	20.6
500----	31	5,783	-12.3		256	23.7
450----	31	6,574	-18.1		261	28.4
400----	31	7,450	-24.7		265	28.2
350----	31	8,409	-31.7		266	31.1
300----	31	9,481	-40.1		270	33.6
250----	31	10,700	-49.5		273	35.9
200----	31	12,132	-58.3		278	35.2
175----	31	12,966	-61.0		276	37.3
150----	31	13,923	-61.9		277	37.1
125----	31	15,048	-63.2		283	29.3
100----	31	16,415	-65.0		287	23.3
80-----	31	17,771	-64.8		296	8.5
60-----	31	19,546	-59.4		73	3.3
50-----	30	20,699	-55.9		83	8.0
40-----	30	22,127	-52.9		80	8.5
30-----	30	23,994	-50.1		75	11.3
25-----	30	25,188	-48.5		90	10.1
20-----	24	26,663	-46.0		95	10.9
15-----	14	28,585	-43.1			
10-----						
7------						
5------						

ELY, NEV. (807 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,908	2.2	55	189	6.0
1,000--	31	133				
950----	31	559				
900----	31	1,009				
850----	31	1,486				
800----	31	1,982	6.2	45	186	4.7
750----	31	2,511	6.2	35	201	3.3
700----	31	3,075	2.6	36	225	7.8
650----	31	3,665	- 1.6	34	234	12.4
600----	31	4,303	- 6.4	37	242	16.7
550----	31	4,969	-11.0	38	246	18.7
500----	31	5,703	-16.1	37	245	20.6
450----	31	6,480	-21.9		248	24.7
400----	31	7,345	-28.3		254	28.2
350----	31	8,289	-35.6		256	29.5
300----	31	9,345	-43.5		267	31.3
250----	31	10,548	-52.5		279	35.4
200----	31	11,968	-58.8		283	32.4
175----	31	12,806	-59.2		274	29.7
150----	31	13,773	-59.2		265	32.4
125----	31	14,917	-59.0		267	28.0
100----	31	16,316	-60.2		264	18.7
80-----	31	17,707	-59.8		258	12.6
60-----	31	19,515	-56.9		222	2.5
50-----	31	20,673	-55.6		68	2.7
40-----	31	22,097	-54.5		92	2.1
30-----	30	23,947	-52.8		97	2.9
25-----	30	25,127	-51.3		89	1.9
20-----	30	26,581	-49.4		28	1.7
15-----	29	28,475	-46.6		170	1.2
10-----	21	31,195	-42.2		312	2.5
7------	5	33,614	-39.6			
5------						

FAIRBANKS, ALASKA (993 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	135	7.3	65	343	4.5
1,000--	31	79				
950----	31	500	7.9	47	40	4.5
900----	31	946	5.8	46	107	1.7
850----	31	1,411	2.9	47	94	.6
800----	31	1,900	- .2	50	114	.8
750----	31	2,412	- 3.9	53	215	2.7
700----	31	2,955	- 7.4	54	203	3.1
650----	31	3,523	-10.6	49	222	3.7
600----	30	4,140	-14.3	45	235	4.7
550----	30	4,788	-18.6	43	248	5.1
500----	30	5,498	-23.5	40	264	5.4
450----	30	6,250	-29.0	41	255	2.5
400----	30	7,090	-35.2	38	262	4.5
350----	30	8,007	-42.2		289	5.4
300----	30	9,032	-50.0		299	7.2
250----	30	10,206	-55.7		295	6.2
200----	30	11,632	-53.1		281	3.5
175----	29	12,498	-51.3		229	2.1
150----	29	13,503	-50.1		234	1.2
125----	28	14,695	-49.9		182	1.0
100----	28	16,154	-49.9		147	3.3
80-----	27	17,617	-49.3		126	2.9
60-----	26	19,510	-48.4		100	4.9
50-----	23	20,723	-47.7		88	5.6
40-----	23	22,196	-47.4		89	8.4
30-----	22	24,094	-46.9		85	12.6
25-----	22	25,302	-46.3		86	14.6
20-----	22	26,787	-45.1		87	17.5
15-----	15	28,703	-42.7		88	26.2
10-----	10	31,471	-38.9			
7------						
5------						

FLINT, MICH. (984 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	234	10.1	87	190	1.2
1,000--	31	95				
950----	31	522	10.7	75	226	4.3
900----	31	973	8.5	72	247	4.9
850----	31	1,444	6.2	68	247	5.2
800----	31	1,939	3.8	64	260	6.2
750----	31	2,458	1.2	57	259	6.4
700----	31	3,014	- 1.9	55	256	6.4
650----	31	3,596	- 4.8	48	256	8.5
600----	31	4,227	- 8.3	42	271	7.8
550----	31	4,894	-12.3	38	285	8.2
500----	31	5,620	-17.0	38	294	9.3
450----	31	6,395	-22.3	40	292	9.5
400----	31	7,238	-28.3	41	296	12.2
350----	31	8,200	-35.5		300	15.5
300----	31	9,257	-42.5		298	19.4
250----	31	10,471	-49.0		294	22.0
200----	31	11,919	-53.6		291	26.4
175----	31	12,776	-54.3		279	20.8
150----	31	13,763	-54.8		276	18.5
125----	31	14,927	-55.6		271	15.2
100----	31	16,346	-56.8		273	10.5
80-----	31	17,758	-57.2		274	7.2
60-----	31	19,586	-55.2		9	1.7
50-----	29	20,751	-53.6		48	3.1
40-----	29	22,191	-51.9		74	5.1
30-----	28	24,066	-49.9		76	5.8
25-----	26	25,251	-48.9		73	5.4
20-----	23	26,718	-47.0		67	4.3
15-----	20	28,638	-44.1		63	8.9
10-----	7	31,408	-38.4			
7------						

FORT WORTH, TEX. (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	180	17.5	81	185	3.5
1,000--	31	111				
950----	31	550	17.4	68	186	12.0
900----	31	1,012	15.9	62	211	13.6
850----	31	1,497	14.8	51	238	12.8
800----	31	2,009	12.9	39	257	12.4
750----	31	2,545	9.8	37	287	10.9
700----	31	3,118	6.0	34	277	14.2
650----	31	3,716	1.7	34	285	16.9
600----	31	4,360	- 3.2	36	288	19.6
550----	31	5,035	- 8.2	38	285	21.8
500----	31	5,775	-13.5	37	279	25.1
450----	31	6,563	-19.0		278	26.2
400----	31	7,435	-24.9		275	30.7
350----	31	8,392	-32.1		275	34.2
300----	30	9,462	-40.4		275	36.7
250----	30	10,680	-49.7		272	42.0
200----	30	12,111	-58.1		270	45.9
175----	30	12,947	-60.5		273	47.6
150----	30	13,909	-60.6		273	42.2
125----	30	15,040	-62.3		274	33.6
100----	30	16,414	-63.7		271	24.5
80-----	29	17,778	-63.9		266	11.5
60-----	29	19,560	-59.8		125	3.1
50-----	29	20,710	-56.0		82	6.0
40-----	29	22,139	-53.5		83	7.0
30-----	29	24,003	-50.7		78	9.3
25-----	29	25,195	-49.3		71	9.1
20-----	28	26,662	-46.8		73	8.9
15-----	23	28,594	-43.0		66	7.8
10-----	9	31,294	-39.2			
7------						

GLASGOW, MONT. (931 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	696	7.0	74	29	1.2
1,000--	31	101				
950----	31	523				
900----	31	977	9.8	52	287	6.4
850----	31	1,450	8.1	48	290	10.3
800----	31	1,949	4.8	50	287	10.5
750----	31	2,465	1.3	55	268	10.9
700----	31	3,024	- 2.4	55	265	13.2
650----	31	3,599	- 6.2	53	262	15.3
600----	31	4,231	-10.2	53	264	20.8
550----	31	4,886	-14.7	50	264	24.1
500----	31	5,611	-19.8	48	268	25.8
450----	31	6,374	-25.3	44	266	28.2
400----	31	7,230	-31.8	40	261	28.4
350----	31	8,161	-38.6		260	31.7
300----	31	9,202	-46.2		256	37.1
250----	30	10,397	-53.7		259	40.2
200----	30	11,820	-55.9		255	34.2
175----	30	12,671	-55.5		261	31.7
150----	30	13,657	-54.2		260	23.9
125----	30	14,827	-54.0		268	15.5
100----	30	16,258	-54.7		257	12.6
80-----	30	17,688	-54.1		255	7.6
60-----	29	19,537	-52.7		267	2.1
50-----	27	20,717	-52.2			.0
40-----	27	22,164	-51.2		96	3.1
30-----	27	24,038	-50.1		94	4.7
25-----	26	25,228	-49.5		98	6.0
20-----	26	26,694	-48.1		91	6.2
15-----	26	28,604	-45.0		97	6.0
10-----	22	31,346	-40.6		104	12.2
7------	9	33,808	-37.6			

GRAND JUNCTION, COLO. (850 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,474	10.8	42	120	7.6
1,000--	31	90				
950----	31	539				
900----	31	985				
850----	31	1,472			118	8.2
800----	31	1,980	12.0	31	151	7.0
750----	31	2,515	8.6	32	219	4.5
700----	31	3,083	4.1	37	255	9.5
650----	31	3,675	- .8	41	262	11.7
600----	31	4,314	- 5.9	41	266	13.4
550----	31	4,980	-10.8	44	267	14.2
500----	31	5,715	-15.8	41	262	16.5
450----	31	6,494	-21.7	38	265	17.3
400----	31	7,358	-28.1	35	265	19.4
350----	31	8,301	-35.4		266	21.8
300----	31	9,356	-43.8		264	25.8
250----	31	10,555	-52.6		263	31.1
200----	31	11,974	-58.3		267	33.2
175----	31	12,813	-58.7		269	34.4
150----	31	13,781	-58.5		266	31.9
125----	31	14,923	-59.6		264	28.2
100----	31	16,320	-60.2		270	18.5
80-----	31	17,713	-59.4		245	9.5
60-----	31	19,525	-56.8		202	1.9
50-----	31	20,685	-55.1		83	1.2
40-----	30	22,119	-53.3		66	3.9
30-----	30	23,977	-51.9		66	4.5
25-----	28	25,161	-50.4		62	3.7
20-----	27	26,626	-48.5		52	3.3
15-----	23	28,522	-45.7		63	4.9
10-----	19	31,252	-41.0		2	4.1
7------	6	33,712	-38.2			

GREAT FALLS, MONT. (885 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,123	6.9	64	224	6.8
1,000--	31	103				
950----	31	530				
900----	31	983				
850----	31	1,455	7.7	50	238	14.8
800----	31	1,952	4.4	53	263	12.6
750----	31	2,469	.9	54	268	13.4
700----	31	3,025	- 3.0	57	264	14.4
650----	31	3,602	- 6.9	58	255	16.7
600----	31	4,229	-11.2	56	253	20.4
550----	31	4,885	-15.5	53	254	22.5
500----	31	5,605	-20.4	47	252	24.1
450----	31	6,371	-26.0	40	253	25.5
400----	31	7,220	-32.3	38	257	28.2
350----	31	8,148	-39.5		261	31.3
300----	31	9,188	-46.5		257	33.2
250----	31	10,381	-52.7		260	36.7
200----	31	11,810	-55.1		258	31.9
175----	31	12,664	-54.3		258	31.1
150----	31	13,654	-53.8		259	26.6
125----	31	14,826	-53.8		265	18.3
100----	31	16,260	-54.1		255	14.2
80-----	31	17,688	-54.4		258	9.1
60-----	31	19,537	-53.1		260	3.9
50-----	29	20,708	-52.2		237	2.1
40-----	29	22,154	-51.3		98	2.1
30-----	29	24,027	-50.2		92	3.1
25-----	29	25,220	-49.3		73	3.5
20-----	29	26,686	-48.0		87	4.7
15-----	26	28,595	-45.4		93	2.9
10-----	19	31,321	-40.8		73	9.1
7------	5	33,770	-36.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	GREEN BAY, WIS (985 MB.)						GREENSBORO, N. C. (983 MB.)						HILO, HAWAII (1017 MB.)						INTERNAT. FALLS, MINN. (971 MB.)						JACKSON, MISS. (1003 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	210	7.0	89	14	3.9	30	273	13.6	87	326	2.1	31	11	19.9	88	240	5.8	31	360	5.7	73	33	1.4	31	101	15.6	88	189	1.4
1,000--	31	86					30	125					31	153	21.6	80	224	3.5	31	113					31	120	15.9	85	192	1.7
950----	31	513	9.5	71	28	4.1	30	565	15.2	68	293	3.7	31	595	18.6	83	94	5.2	31	536	7.9	64	63	4.3	31	558	17.2	67	249	6.4
900----	31	960	8.1	69	11	3.3	30	1,017	13.5	61	281	8.5	31	1,061	15.5	85	83	8.4	31	983	7.6	58	73	2.9	31	1,020	15.4	57	254	8.0
850----	31	1,431	6.4	[illegible]	318	1.6	30	1,497	10.9	60	273	12.2	31	1,545	12.5	86	84	6.8	31	1,452	5.3	54	10	1.4	31	1,502	12.8	56	252	10.5
800----	31	1,927	4.4	61	312	2.9	30	[illegible]	7.8	57	269	15.2	31	2,053	9.9	80	88	7.8	31	1,945	2.7	47	333	2.5	31	2,010	10.5	45	255	13.0
750----	31	2,446	1.7	58	315	2.7	30	2,526	5.1	49	267	17.5	31	2,590	9.3	47	90	10.5	31	2,464	.6	40	318	4.3	31	2,544	8.0	39	262	15.9
700----	31	3,004	- 1.2	54	293	2.5	30	3,090	2.1	47	258	19.8	31	3,159	7.3	33	99	8.7	31	3,017	- 1.9	41	304	6.8	31	3,111	4.9	34	271	16.5
650----	31	3,584	- 4.3	50	302	4.5	30	3,683	- 1.2	40	259	21.4	30	3,765	4.8	29	101	4.5	31	3,599	- 4.8	39	301	9.5	31	3,710	1.1	34	279	18.8
600----	31	4,219	- 7.9	45	316	5.8	30	4,319	- 4.8	39	259	23.3	30	4,416	.8		150	2.7	31	4,229	- 8.4		289	11.5	31	4,350	- 3.1	29	275	19.8
550----	31	4,883	-12.1	41	322	7.6	30	4,993	- 9.1	37	257	24.5	30	5,102	- 3.8		204	3.5	31	4,894	-12.7		286	14.0	31	5,025	- 7.8	32	274	22.3
500----	31	5,613	-16.8	36	321	9.1	30	5,730	-13.9		256	28.2	30	5,856	- 9.2		207	5.6	31	5,621	-17.7	35	282	15.5	31	5,767	-13.1	34	278	24.9
450----	31	6,387	-22.2		309	11.9	30	6,515	-19.4		259	28.0	30	6,659	-14.4		233	8.2	31	6,394	-23.2	35	272	17.5	31	6,557	-18.2		282	30.1
400----	31	7,252	-28.3		314	12.4	30	7.388	-25.8		261	30.7	30	7,548	-20.8		237	12.4	31	7,254	-29.6	35	274	20.0	31	7,432	-24.3		274	31.1
350----	31	8,196	-35.1		314	16.9	29	8,349	-32.8		263	36.1	30	8,521	-28.3		244	15.7	31	8,193	-36.6		272	25.5	31	8,392	-31.2		274	34.6
300----	31	9,254	-43.0		308	19.0	29	9,416	-41.0		266	37.7	30	9,609	-36.5		250	22.5	31	9,244	-44.5		268	28.4	31	9,468	-39.1		274	39.4
250----	31	10,461	-51.2		300	24.3	29	10,632	-49.5		266	41.2	30	10,847	-45.9		250	28.2	31	10,443	-52.4		261	32.3	31	10,694	-48.3		278	42.9
200----	31	11,893	-55.9		290	26.0	26	12,093	-57.1		275	40.8	29	12,301	-56.0		252	34.2	30	11,868	-57.0		264	28.0	31	12,136	-56.6		273	43.5
175----	31	12,743	-56.2		280	21.2	26	12,934	-58.7		275	41.0	29	13,141	-60.9		256	31.3	30	12,714	-56.3		270	23.5	31	12,978	-59.3		273	47.0
150----	31	13,723	-55.5		275	16.3	25	13,906	-59.8		276	36.7	29	14,088	-65.7		253	26.4	30	13,697	-54.6		267	19.2	31	13,940	-60.9		272	42.9
125----	31	14,886	-55.6		264	14.2	25	15,044	-60.3		275	28.4	29	15,186	-69.3		261	18.1	30	14,864	-54.7		261	16.1	31	15,072	-62.1		269	36.9
100----	31	16,307	-56.0		266	12.6	25	16,429	-62.3		281	18.3	28	16,507	-72.4		255	12.2	30	16,293	-54.9		258	11.9	31	16,448	-63.5		273	23.7
80-----	31	17,721	-56.8		278	7.8	24	17,810	-61.6		300	8.5	28	17,821	-71.5		302	.8	30	17,720	-54.4		257	7.8	31	17,815	-64.0		287	8.4
60-----	30	19,548	-54.8		316	1.9	23	19,610	-58.1		31	3.9	27	19,538	-66.5		89	8.9	30	19,568	-53.2			.0	31	19,596	-59.5		76	3.1
50-----	30	20,716	-53.7		36	1.7	22	20,769	-55.1		58	3.9	26	20,653	-61.9		85	16.7	28	20,745	-52.7		65	3.1	31	20,744	-56.3		83	6.6
40-----	30	22,154	-52.5		62	9.1	22	22,203	-52.5		62	3.1	25	22,048	-58.1		82	22.5	28	22,189	-51.8		79	5.6	31	22,173	-53.0		87	8.0
30-----	26	24,021	-50.3		71	9.1	18	24,065	-50.5		57	2.1	23	23,878	-54.2		86	26.6	27	24,055	-50.8		67	10.9	27	24,040	-49.7		85	8.7
25-----	24	25,216	-49.0		70	9.3	17	25,266	-49.1		42	3.3	16	25,059	-51.8		82	29.3	25	25,239	-50.0		74	8.5	27	25,238	-47.9		84	8.0
20-----	23	26,686	-47.8		69	8.4	16	26,744	-46.4		22	2.1	9	26,536	-48.5				24	26,706	-48.0		78	12.0	26	26,721	-45.8		86	6.2
15-----	20	28,613	-44.2		66	14.4	15	28,665	-44.1		344	1.0	9	28,442	-45.6				16	28,607	-45.9		76	12.8	25	28,646	-43.2		61	4.7
10-----	12	31,321	-41.2				8	31,385	-40.4										6	31,319	-41.8				19	31,374	-39.9		311	4.3
7------																									7	33,849	-36.1			

Standard pressure surface (mb)	JACKSONVILLE, FLA. (1015 MB.)						JOHNSTON IS., PACIFIC AREA (1015 MB.)						KING SALMON, ALASKA (1007 MB.)						KOTZEBUE, ALASKA (1012 MB.)						LAKE CHARLES, LA. (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	6	18.0	92	279	3.1	31	3	25.2	78	71	14.6	31	15	3.4	87	147	3.7	31	5	- 0.4	90	305	3.9	31	5	17.8	90	110	1.4
1,000--	31	133	19.4	78	285	4.1	31	131	24.3	77	76	16.3	31	74	4.1	83	164	4.7	31	98	1.2	81	305	7.2	31	129	19.2	79	143	2.9
950----	31	569	18.8	62	279	6.0	31	577	20.9	78	84	19.2	31	492	4.0	74	140	4.5	31	506	2.4	67	356	2.3	31	571	17.8	67	190	4.9
900----	31	1,038	16.1	61	271	6.2	31	1,046	17.6	79	90	19.8	31	930	2.1	71	100	7.4	31	949	1.0	62	253	.6	31	1,032	16.1	60	216	6.8
850----	31	1,522	13.4	53	259	6.8	31	1,533	14.7	75	90	17.7	31	1,390	- .6	69	99	9.1	31	1,407	- 1.2	59	194	3.7	31	1,517	13.9	51	222	8.4
800----	31	2,030	11.0	44	262	9.3	31	2,044	12.7	60	89	13.4	31	1,872	- 3.2	66	92	8.0	31	1,889	- 3.7	58	184	3.9	31	2,027	12.1	43	252	8.4
750----	31	2,562	8.3	41	266	11.3	31	2,581	11.4	36	89	9.3	31	2,378	- 5.9	64	97	8.9	31	2,391	- 6.6	54	193	6.8	31	2,567	9.4	36	275	11.3
700----	31	3,132	5.1	38	269	13.4	31	3,159	8.9	29	91	7.6	31	2,919	- 8.9	60	107	9.7	31	2,934	- 9.3	49	199	7.2	31	3,136	6.3	30	288	11.9
650----	31	3,728	1.4	33	271	16.7	31	3,763	5.4		93	4.7	31	3,488	-11.9	56	105	11.3	31	3,493	-12.5	45	189	7.6	31	3,737	2.4		291	13.8
600----	31	4,373	- 2.7	30	272	20.4	31	4,418	1.8		87	4.1	31	4,099	-15.5	55	103	12.8	31	4,112	-16.0	43	203	11.3	31	4,382	- 1.9		279	15.5
550----	31	5,051	- 7.2		272	21.2	31	5,106	- 2.4		87	2.7	31	4,747	-19.6	56	106	13.8	31	4,757	-20.2	41	207	11.1	31	5,061	- 6.9		278	18.1
500----	31	5,794	-11.8		272	22.7	31	5,864	- 7.2		61	1.9	31	5,454	-24.3	55	107	16.3	31	5,463	-24.6	38	208	13.2	31	5,806	-12.0		275	21.0
450----	31	6,585	-17.3		279	25.1	31	6,668	-12.4		357	2.1	31	6,208	-29.6	54	108	19.4	31	6,215	-30.0		213	14.2	31	6,600	-17.5		272	24.9
400----	31	7,466	-23.7		274	30.3	31	7,567	-18.7		317	3.1	31	7,045	-35.5	50	106	20.2	31	7,054	-35.8		214	15.2	31	7,477	-23.6		273	32.6
350----	31	8,428	-30.9		276	36.5	31	8,548	-25.9		287	7.6	31	7,962	-42.1		94	21.0	31	7,970	-41.9		222	17.1	31	8,440	-30.8		269	32.4
300----	31	9,504	-39.0		267	43.3	31	9,646	-34.4		272	16.1	31	8,990	-48.6		95	21.4	30	8,998	-48.2		218	21.6	31	9,516	-39.0		268	35.4
250----	31	10,730	-48.1		266	49.5	30	10,899	-43.7		279	29.3	31	10,180	-51.1		95	15.5	29	10,178	-53.0		224	19.4	31	10,742	-48.1		267	42.4
200----	31	12,170	-57.2		273	55.8	30	12,364	-54.5		273	44.1	30	11,638	-50.8		106	2.7	27	11,624	-49.9		211	13.0	31	12,182	-57.3		266	49.4
175----	30	13,015	-60.8		273	59.5	29	13,209	-60.4		275	45.7	30	12,508	-49.2		158	2.3	27	12,500	-48.7		214	8.7	31	13,020	-60.7		266	48.8
150----	30	13,970	-62.3		272	56.2	29	14,157	-66.4		276	42.7	30	13,519	-49.0		143	7.4	26	13,515	-48.8		199	6.8	31	13,976	-62.3		270	47.0
125----	30	15,092	-64.2		276	41.2	29	15,248	-71.6		274	36.1	30	14,715	-49.6		127	3.3	26	14,709	-48.9		175	6.2	31	15,097	-64.7		272	33.4
100----	30	16,450	-66.6		273	28.4	28	16,552	-74.8		276	20.8	28	16,170	-50.2		126	4.9	25	16,176	-49.0		173	4.9	31	16,453	-66.8		278	17.9
80-----	30	17,800	-65.5		273	14.6	27	17,852	-73.4		285	6.0	27	17,622	-50.1		126	6.2	24	17,640	-48.6		141	3.7	29	17,805	-65.9		290	10.3
60-----	30	19,569	-60.6		61	6.8	26	19,555	-67.8		91	8.0	23	19,491	-49.6		115	5.6	21	19,510	-48.3		133	5.2	28	19,576	-60.0		86	7.2
50-----	30	20,713	-56.9		81	10.3	25	20,663	-63.2		96	14.4	23	20,684	-49.4		107	7.0	18	20,722	-47.4		112	5.8	27	20,727	-56.3		86	11.1
40-----	29	22,142	-53.2		89	15.5	24	22,048	-59.1		83	19.2	22	22,149	-49.4		109	7.8	16	22,203	-46.9		97	4.5	26	22,157	-53.4		94	13.8
30-----	29	24,007	-50.0		86	17.7	21	23,867	-55.4		89	22.7	19	24,029	-49.4		104	10.3	14	24,084	-47.0		102	8.5	25	24,022	-49.9		90	16.7
25-----	28	25,205	-47.6		93	17.5	15	25,035	-53.1		86	29.7	18	25,220	-49.4		105	11.5	13	25,277	-46.3		94	10.7	24	25,217	-47.9		84	19.0
20-----	25	26,686	-45.2		83	15.7	15	26,481	-50.7		87	36.9	13	26,648	-49.2		103	10.7	12	26,782	-44.5				22	26,708	-45.2		82	20.6
15-----	12	28,620	-41.1				12	28,360	-47.7				13	28,549	-47.5		91	12.4	9	28,684	-42.9				20	28,640	-41.2		86	20.2
10-----													8	31,277	-42.7				6	31,369	-40.3				12	31,414	-36.3			
7------																									7	33,929	-33.8			

Standard pressure surface (mb)	LANDER, WYO. (827 MB.)						LAS VEGAS, NEV. (934 MB.)						LIHUE, HAWAII (1014 MB.)						LITTLE ROCK, ARK. (1004 MB.)						McGRATH, ALASKA (997 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,696	6.8	54	252	4.1	31	660	16.7	25	210	7.8	31	36	22.6	82	43	9.7	31	79	14.5	87	241	2.9	31	103	5.0	73	243	1.0
1,000--	31	97					31	70					31	158	21.7	81	54	11.3	31	112	14.9	81	250	2.9	31	77				
950----	31	527					31	515					31	597	18.6	84	75	13.8	31	555	16.7	61	252	9.7	31	498	7.4	59	164	1.7
900----	31	986					31	981	19.9	20	234	7.0	31	1,065	15.3	86	80	13.6	31	1,010	14.5	56	262	10.3	31	943	5.0	59	158	3.9
850----	31	1,467					31	1,470	17.3	20	267	5.8	31	1,548	12.4	84	82	12.2	31	1,492	11.9	53	260	11.9	31	1,407	1.9	62	163	4.9
800----	31	1,968	8.6	42	284	3.9	31	1,983	13.5	23	254	4.9	31	2,056	10.8	65	87	12.0	31	1,997	9.5	45	260	12.4	31	1,893	- 1.4	65	149	5.1
750----	31	2,497	5.3	42	286	5.2	31	2,521	9.4	24	245	5.6	31	2,593	9.7	38	84	11.3	31	2,534	6.8	40	272	12.6	31	2,402	- 4.4	60	160	4.1
700----	31	3,059	1.7	41	268	7.4	31	3,090	5.1	26	231	4.3	31	3,165	7.4	25	80	8.4	31	3,095	3.7	37	278	14.6	31	2,945	- 7.8	58	150	4.9
650----	31	3,644	- 2.7	44	274	12.2	31	3,684	.8	28	252	5.4	31	3,766	3.6	25	79	4.7	31	3,692	- .1	36	269	17.3	31	3,514	-11.3	56	147	6.0
600----	31	4,281	- 7.1	42	276	17.5	31	4,327	- 3.8	29	258	8.2	31	4,416	- .5	26	72	2.5	31	4,330	- 4.3	36	267	19.2	31	4,129	-14.7	50	137	8.9
550----	31	4,944	-12.0	42	274	21.0	31	4,999	- 8.7	26	253	13.6	31	5,099	- 5.1	27		.0	31	5,005	- 8.8	38	264	20.2	31	4,777	-18.7	44	142	10.5
500----	31	5,676	-17.1	39	267	23.1	31	5,740	-13.7		265	17.7	31	5,850	- 9.8		1	.6	31	5,742	-13.9		263	21.2	31	5,487	-23.4	45	143	8.0
450----	31	6,450	-22.8	36	265	25.8	31	6,524	-19.8		264	22.7	31	6,651	-15.2		325	2.1	31	6,530	-19.3		265	26.4	31	6,242	-28.8	44	125	6.8
400----	31	7,311	-29.5		259	25.5	31	7,395	-26.5		270	25.3	30	7,534	-21.4		316	3.7	31	7,402	-25.5		270	24.7	31	7,084	-34.6	44	108	8.4
350----	31	8,250	-37.0		261	28.2	31	8,346	-33.7		275	28.6	30	8,504	-29.0		297	7.0	31	8,358	-32.4		263	28.2	31	8,004	-41.4		111	8.5
300----	31	9,299	-45.2		257	31.7	31	9,408	-42.2		284	32.3	30	9,588	-37.4		285	11.1	31	9,428	-40.5		261	28.8	30	9,035	-48.7		102	7.6
250----	31	10,491	-53.8		258	33.8	31	10,617	-51.4		287	36.7	30	10,823	-46.8		284	14.2	31	10,647	-49.3		267	27.0	30	10,217	-54.4		98	8.0
200----	31	11,905	-58.5		268	36.3	31	12,039	-59.3		277	41.8	30	12,269	-56.4		275	20.2	31	12,083	-57.1		262	33.6	30	11,650	-52.2		62	3.9
175----	31	12,745	-58.8		265	33.6	31	12,872	-60.3		273	43.5	30	13,109	-60.5		274	23.7	31	12,923	-59.3		261	34.6	30	12,519	-50.3		103	8.0
150----	31	13,717	-57.2		269	33.2	31	13,835	-60.0		272	41.0	30	14,060	-64.7		272	25.8	31	13,887	-59.4		267	33.0	29	13,524	-49.8		92	6.0
125----	31	14,875	-56.9		270	27.0	31	14,970	-61.2		274	32.4	30	15,164	-68.3		273	21.2	31	15,026	-60.5		263	29.0	29	14,716	-50.0		82	4.7
100----	31	16,284	-57.3		268	24.1	29	16,358	-62.7		268	24.5	28	16,488	-70.0		258	13.4	30	16,405	-62.1		263	19.2	29	16,174	-50.3		98	5.8
80-----	31	17,695	-57.0		259	13.2	25	17,727	-61.9		270	12.2	25	17,820	-69.5		229	5.2	29	17,785	-61.2		260	14.4	28	17,633	-49.6		100	6.4
60-----	31	19,522	-55.2		279	3.3	25	19,518	-58.8		235	1.4	25	19,550	-64.6		99	8.5	29	19,579	-58.7		307	2.9	27	19,523	-49.0		89	7.0
50-----	30	20,687	-53.8		204	1.4	25	20,668	-56.4		106	1.4	25	20,672	-60.9		85	14.4	28	20,733	-55.8		343	2.5	26	20,729	-48.6		91	8.5
40-----	30	22,124	-52.8		65	2.3	23	22,093	-54.7		71	3.7	25	22,072	-57.2		88	19.0	28	22,162	-53.6		77	4.1	26	22,197	-48.5		91	11.1
30-----	30	23,984	-51.6		69	3.5	23	23,940	-52.8		62	4.5	24	23,909	-53.1		88	25.5	27	24,023	-50.7		78	5.1	25	24,092	-48.3		88	14.6
25-----	29	25,166	-50.8		62	4.1	23	25,120	-51.2		63	5.4	24	25,089	-50.6		91	27.2	26	25,220	-48.5		82	3.9	23	25,296	-47.5			
20-----	29	26,623	-49.1		54	5.4	21	26,586	-48.4		78	6.2	22	26,552	-47.8		86	28.4	22	26,686	-46.5		76	5.1	19	26,799	-45.8			
15-----	28	28,520	-46.4		52	3.9	15	28,504	-45.3		122	5.2	20	28,464	-45.2		91	30.1	18	28,618	-43.3				7	28,715	-44.3			
10-----	20	31,250	-41.9		27	3.3	9	31,235	-41.5				5	31,145	-43.5				6	31,381	-37.4									

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MAY 1960

MEDFORD, OREG. (970 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	401	7.6	87		0.0
1,000	31	146				
950	31	575	8.4	79	284	2.7
900	31	1,018	6.8	75	253	2.7
850	31	1,485	4.3	74	225	6.2
800	31	1,977	1.8	66	228	10.9
750	31	2,493	- .8	59	235	16.1
700	31	3,043	- 3.6	57	247	20.0
650	31	3,623	- 6.9	51	256	21.8
600	31	4,246	-10.4	47	256	24.3
550	31	4,909	-14.6	49	257	26.4
500	31	5,628	-19.2	46	258	29.0
450	31	6,397	-24.6	44	259	31.5
400	31	7,251	-30.8		256	35.0
350	31	8,187	-37.5		257	37.7
300	31	9,236	-44.3		266	40.8
250	31	10,439	-51.8		270	45.1
200	30	11,868	-57.0		270	46.4
175	30	12,713	-57.3		264	39.1
150	30	13,691	-56.2		268	32.8
125	30	14,849	-56.4		266	29.3
100	30	16,264	-57.0		262	20.4
80	30	17,677	-56.5		249	13.4
60	30	19,509	-55.3		249	4.5
50	29	20,676	-54.7		237	.6
40	29	22,105	-54.1		265	1.7
30	29	23,956	-53.3		26	1.2
25	29	25,131	-52.8		32	1.6
20	28	26,575	-51.7		7	2.1
15	28	28,450	-49.4		314	1.9
10	24	31,133	-45.1		272	8.0
7	24	33,534	-41.9		258	7.2
5	12	35,824	-39.7			

MIAMI, FLA. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	21.9	84	6	0.8
1,000	31	129	22.4	78	54	.8
950	31	576	19.6	76	151	3.9
900	31	1,039	16.9	68	174	2.9
850	31	1,525	15.2	49	249	1.4
800	31	2,037	13.0	41	269	3.5
750	31	2,577	10.1	40	269	5.6
700	31	3,148	6.8	40	268	6.2
650	31	3,751	3.1	39	278	7.0
600	31	4,398	- .8	36	266	11.7
550	31	5,081	- 4.5		276	14.8
500	31	5,834	- 8.8		277	18.3
450	31	6,637	-14.2		274	22.5
400	31	7,527	-20.5		277	26.2
350	31	8,502	-27.5		278	32.3
300	31	9,593	-35.5		269	38.7
250	31	10,837	-45.0		268	49.7
200	31	12,296	-55.0		273	60.2
175	31	13,139	-60.2		274	62.8
150	31	14,089	-65.2		272	57.5
125	30	15,185	-69.0		273	46.4
100	30	16,512	-71.1		276	30.9
80	30	17,833	-70.0		285	11.5
60	30	19,574	-63.3		65	5.2
50	29	20,707	-58.5		81	10.1
40	28	22,126	-54.4		87	14.4
30	27	23,988	-50.4		90	18.8
25	25	25,185	-48.3		87	21.0
20	20	26,650	-46.0		93	21.2
15	13	28,604	-42.4		84	22.7
10	7	31,341	-38.2			
7						
5						

MIDLAND, TEX. (913 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	871	14.8	61	148	3.5
1,000	31	95				
950	31	535				
900	31	999	16.7	57	158	5.8
850	31	1,487	17.1	43	223	7.8
800	31	2,002	15.3	32	265	6.8
750	31	2,542	11.6	31	271	8.4
700	31	3,118	7.4	34	273	8.9
650	31	3,720	2.9	35	269	11.5
600	31	4,366	- 2.2	38	263	15.5
550	31	5,043	- 7.3	37	259	20.2
500	31	5,786	-12.9	39	260	23.5
450	31	6,576	-18.4		265	27.0
400	31	7,451	-24.8		267	30.5
350	31	8,408	-32.1		269	33.8
300	31	9,478	-40.2		267	38.5
250	30	10,697	-49.5		265	41.8
200	29	12,128	-58.1		265	48.2
175	28	12,960	-60.5		266	53.4
150	28	13,919	-61.3		267	47.4
125	28	15,046	-62.9		270	38.9
100	28	16,412	-65.0		269	25.5
80	28	17,772	-64.6		268	12.0
60	27	19,543	-60.4		124	1.4
50	27	20,689	-56.7		92	8.0
40	27	22,114	-53.7		97	6.8
30	27	23,974	-51.0		78	8.4
25	27	25,165	-49.2		81	9.1
20	25	26,644	-46.6		75	9.9
15	23	28,557	-43.7		73	6.6
10	10	31,348	-39.8			
7						
5						

MONTGOMERY, ALA. (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	61	16.0	83	232	2.3
1,000	31	130	16.8	80	253	3.1
950	31	574	17.3	66	266	5.1
900	31	1,030	15.1	63	251	5.8
850	31	1,512	12.4	59	253	8.2
800	31	2,019	9.8	50	265	9.7
750	31	2,551	7.2	41	270	13.4
700	31	3,118	4.4	37	269	15.7
650	31	3,713	.8	32	271	19.0
600	31	4,357	- 3.2	30	270	22.0
550	31	5,033	- 8.0		276	23.5
500	31	5,773	-12.9		275	25.1
450	31	6,562	-18.1		275	28.0
400	31	7,441	-24.2		274	33.2
350	31	8,400	-31.1		271	39.1
300	31	9,475	-39.2		275	41.2
250	31	10,701	-48.0		275	46.4
200	31	12,144	-56.3		273	49.7
175	31	12,985	-59.6		271	50.7
150	31	13,947	-60.4		270	45.3
125	31	15,079	-61.9		268	38.3
100	31	16,451	-64.5		269	25.1
80	31	17,814	-64.3		272	12.2
60	31	19,589	-60.0		17	1.7
50	31	20,737	-56.3		72	4.1
40	31	22,164	-53.3		86	7.8
30	30	24,035	-49.9		86	8.0
25	29	25,231	-48.2		82	7.4
20	29	26,708	-46.0		82	6.2
15	25	28,640	-43.1		44	2.3
10	■	31,298	-39.4			
7						
5						

NANTUCKET, MASS. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	14	11.1	87	171	1.4
1,000	31	123	12.0	79	212	2.1
950	31	552	12.8	64	215	4.1
900	31	1,009	11.0	55	224	3.1
850	31	1,484	8.6	53	223	3.7
800	31	1,984	6.1	52	235	4.3
750	31	2,507	3.3	48	231	6.0
700	31	3,068	.6	45	238	6.2
650	31	3,654	- 2.7	42	236	7.6
600	31	4,290	- 6.3	36	241	9.1
550	31	4,959	-10.6		248	8.7
500	31	5,693	-15.4		252	9.3
450	31	6,471	-21.2		250	11.5
400	31	7,338	-27.5		246	13.0
350	31	8,285	-34.4		262	14.8
300	31	9,347	-41.8		260	21.8
250	31	10,561	-50.2		265	25.3
200	31	11,996	-55.6		274	23.7
175	31	12,845	-56.6		270	24.7
150	31	13,823	-56.8		267	23.1
125	31	14,978	-57.5		272	17.9
100	31	16,386	-58.2		276	11.1
80	31	17,791	-58.0		277	6.4
60	30	19,609	-55.8		325	1.7
50	30	20,776	-53.4			.0
40	30	22,220	-51.5		94	2.9
30	28	24,099	-50.0		110	5.2
25	25	25,292	-48.8		99	4.5
20	24	26,755	-47.3		78	3.9
15	21	28,666	-44.3		91	6.0
10	14	31,399	-40.4		97	8.0
7	7	33,742	-38.4			
5						

NASHVILLE, TENN. (993 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	177	13.1	83	234	1.9
1,000	29	118				
950	29	552	14.3	64	256	8.2
900	29	1,007	12.1	60	258	10.3
850	29	1,485	9.4	61	263	12.8
800	28	1,986	6.8	55	264	15.5
750	28	2,510	4.2	49	267	17.5
700	28	3,073	1.2	38	268	20.2
650	28	3,661	- 1.9		270	23.3
600	28	4,299	- 5.4	32	276	25.6
550	28	4,967	-10.0	32	278	29.1
500	28	5,707	-15.1		279	31.3
450	28	6,490	-20.3		276	33.0
400	28	7,359	-26.7		278	32.8
350	28	8,310	-33.8		279	34.8
300	28	9,374	-41.6		285	37.9
250	28	10,589	-49.5		280	41.0
200	28	12,026	-56.6		277	45.3
175	28	12,869	-58.4		276	46.2
150	28	13,840	-58.0		273	42.9
125	28	14,988	-59.0		271	29.7
100	28	16,380	-61.1		269	19.8
80	28	17,764	-61.3		274	9.1
60	28	19,561	-58.4		24	2.5
50	28	20,714	-55.8		71	7.0
40	27	22,144	-53.2		86	7.2
30	26	24,009	-51.2		73	5.1
25	26	25,198	-49.9		62	2.7
20	20	26,663	-48.1		68	4.7
15	24	28,567	-45.9		35	2.9
10	16	31,238	-42.5			
7						

N. Y. INT. AP. IDLEWILD (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	13.5	79	313	1.7
1,000	31	121	13.3	77	307	2.3
950	31	550	12.1	70	225	3.7
900	31	1,005	10.1	66	224	5.6
850	31	1,479	7.7	63	234	6.6
800	31	1,977	5.0	61	235	8.7
750	31	2,498	2.3	54	239	9.5
700	31	3,056	- .5	49	240	10.3
650	31	3,642	- 3.4	42	237	11.9
600	31	4,275	- 7.2		246	12.0
550	31	4,943	-11.3		249	12.8
500	31	5,672	-16.3		246	13.6
450	31	6,447	-21.8		250	16.7
400	31	7,312	-28.3		259	18.7
350	31	8,257	-35.0		262	21.0
300	31	9,316	-42.5		262	24.1
250	31	10,527	-50.5		267	31.3
200	31	11,962	-55.6		272	33.4
175	31	12,810	-56.5		271	31.1
150	31	13,789	-56.6		268	24.3
125	31	14,942	-57.8		272	18.5
100	31	16,348	-58.4		272	10.9
80	30	17,752	-58.6		264	6.0
60	30	19,569	-56.5			.0
50	29	20,731	-54.1		81	2.5
40	28	22,174	-51.7		86	2.5
30	28	24,048	-50.0		65	3.3
25	27	25,244	-48.8		47	3.5
20	26	26,720	-47.0		34	2.7
15	26	28,639	-43.8		304	2.5
10	22	31,389	-39.2		5	.6
7	8	33,783	-35.7			

NOME, ALASKA (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	2.8	79	51	3.5
1,000	31	85	4.0	72	63	4.3
950	31	502	3.7	63	113	6.6
900	31	940	1.7	62	136	6.4
850	31	1,399	- .9	59	144	5.8
800	31	1,880	- 3.6	58	146	7.2
750	31	2,387	- 6.4	59	172	6.8
700	31	2,925	- 9.3	55	167	7.2
650	31	3,493	-12.7	50	169	8.2
600	31	4,102	-16.0	49	183	8.5
550	31	4,751	-19.8	48	185	9.1
500	31	5,454	-24.1	43	190	9.5
450	31	6,209	-29.5	39	197	10.3
400	31	7,045	-35.7	41	194	12.2
350	31	7,960	-42.2		200	11.7
300	31	8,988	-48.8		199	14.2
250	31	10,173	-52.8		183	14.0
200	30	11,617	-50.5		179	10.5
175	30	12,492	-48.8		172	8.9
150	30	13,506	-48.8		163	7.2
125	30	14,702	-49.4		166	4.5
100	29	16,163	-49.4		135	3.9
80	29	17,625	-49.3		126	4.7
60	29	19,515	-48.9		109	5.1
50	29	20,715	-48.4		100	5.6
40	29	22,184	-48.3		99	7.2
30	29	24,079	-48.2		89	10.1
25	27	25,274	-47.7		86	12.2
20	25	26,745	-46.3		89	13.6
15	21	28,672	-43.1		84	17.5
10	15	31,408	-38.5			
7						

NORFOLK, VA. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	9	16.1	79	208	2.5
1,000	31	122	16.7	73	153	1.2
950	31	559	15.5	63	243	1.7
900	31	1,016	12.9	61	271	4.9
850	31	1,495	10.4	59	261	9.5
800	31	1,997	7.7	54	253	12.6
750	31	2,527	4.4	53	252	15.0
700	31	3,086	1.7	46	255	16.9
650	31	3,674	- 1.8	41	251	17.9
600	31	4,312	- 5.4	39	260	20.8
550	31	4,980	- 9.8	40	259	22.9
500	31	5,718	-14.7		262	27.4
450	31	6,500	-20.0		262	29.9
400	31	7,371	-26.3		265	33.2
350	31	8,323	-33.3		260	36.5
300	31	9,388	-41.1		261	39.6
250	31	10,604	-49.8		263	44.5
200	31	12,037	-56.7		262	43.1
175	31	12,882	-57.7		263	39.6
150	31	13,853	-58.4		265	34.2
125	31	14,998	-59.3		271	26.6
100	31	16,391	-60.7		267	16.9
80	31	17,779	-60.2		277	8.5
60	31	19,589	-57.2		81	1.4
50	31	20,748	-54.7		73	3.7
40	30	22,184	-52.0		87	5.2
30	27	24,057	-50.0		81	4.5
25	27	25,253	-48.6		57	3.3
20	27	26,730	-46.4		57	1.4
15	25	28,669	-43.0		73	2.1
10	18	31,414	-37.7		33	1.7
7	10	33,897	-34.3			

NORTH PLATTE, NEBR. (915 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	848	8.1	84	9	2.1
1,000	31	101				
950	31	529				
900	31	980	10.3	70	19	2.1
850	31	1,457	11.0	52	319	2.1
800	31	1,962	8.6	51	312	5.6
750	31	2,491	5.7	48	313	9.9
700	31	3,055	2.3	50	311	11.7
650	31	3,645	- 1.8	49	306	12.6
600	31	4,283	- 6.3	50	299	16.3
550	31	4,950	-10.8	48	296	17.1
500	31	5,685	-16.1	44	297	17.9
450	31	6,464	-21.8	40	302	17.9
400	31	7,328	-28.1	39	294	18.1
350	31	8,273	-35.4		296	18.8
300	31	9,329	-43.4		292	21.2
250	31	10,532	-52.4		287	23.5
200	31	11,949	-58.9		273	29.5
175	31	12,790	-58.0		273	29.9
150	31	13,762	-57.5		276	26.2
125	30	14,914	-57.9		266	20.6
100	30	16,320	-58.4		262	15.7
80	30	17,725	-57.7		268	7.8
60	30	19,548	-55.9		101	.6
50	30	20,711	-54.8		69	1.6
40	30	22,147	-52.7		71	3.3
30	30	24,010	-51.4		54	4.7
25	30	25,198	-50.2		58	6.2
20	27	26,676	-47.5		55	5.8
15	24	28,592	-45.2		83	3.5
10	16	31,302	-40.9		32	3.5
7	■	33,670	-38.3			

OAKLAND, CALIF. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	11.5	85	280	3.3
1,000	31	140	11.2	82	273	3.7
950	31	569	10.5	72	289	7.8
900	31	1,020	11.8	37	307	11.9
850	31	1,496	10.0	31	297	10.7
800	31	1,998	7.6		291	11.5
750	31	2,525	5.0		284	14.0
700	31	3,087	1.7	30	278	15.2
650	31	3,674	- 1.8	30	275	17.7
600	31	4,314	- 5.5	29	273	22.0
550	31	4,979	-10.0		273	24.7
500	31	5,720	-15.1		275	29.3
450	31	6,495	-20.6		274	34.6
400	31	7,370	-27.0		274	38.3
350	31	8,320	-34.2		274	41.4
300	31	9,382	-42.2		274	45.7
250	31	10,594	-50.8		275	49.4
200	30	12,020	-58.9		274	52.3
175	27	12,862	-60.5		273	49.2
150	27	13,826	-59.9		268	42.9
125	26	14,967	-60.2		268	37.9
100	25	16,354	-61.5		267	28.4
80	25	17,740	-60.8		261	14.4
60	25	19,543	-57.5		262	5.1
50	25	20,698	-56.3		80	1.6
40	25	22,119	-55.0		72	4.9
30	23	23,967	-53.2		67	5.8
25	23	25,144	-52.2		67	6.0
20	22	26,592	-51.2		64	3.5
15	18	28,475	-48.8		342	.8
10	9	31,137	-45.1			

OKLAHOMA CITY, OKLA. (967 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	392	14.3	82	175	4.3
1,000	31	105				
950	31	539	16.0	67	181	4.7
900	31	1,000	14.9	60	218	11.5
850	31	1,483	13.4	50	247	12.2
800	31	1,991	10.9	45	261	12.4
750	31	2,522	8.0	40	268	13.4
700	31	3,092	4.2	41	283	14.4
650	31	3,685	- .2	38	287	18.1
600	31	4,326	- 4.6	35	287	22.3
550	31	4,999	- 9.4	32	290	25.8
500	31	5,734	-14.5		287	26.0
450	31	6,516	-20.2		283	29.7
400	31	7,387	-26.4		276	32.4
350	31	8,338	-33.4		273	35.9
300	31	9,403	-41.7		272	36.9
250	31	10,617	-50.1		266	40.0
200	31	12,046	-58.1		266	45.3
175	31	12,884	-59.4		268	43.1
150	31	13,850	-59.6		270	35.2
125	31	14,990	-60.1		274	31.5
100	30	16,372	-62.1		272	19.6
80	29	17,752	-61.3		274	7.8
60	28	19,545	-58.2		82	3.3
50	27	20,698	-55.9		78	5.6
40	25	22,133	-53.0		83	7.0
30	24	23,995	-50.5		73	5.4
25	22	25,187	-49.0		87	5.6
20	20	26,661	-46.5		101	11.3
15	9	28,622	-43.8			
10						

OMAHA, NEBR. (964 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	403	10.6	80	349	1.4
1,000	31	93				
950	31	526	12.3	68	334	2.5
900	31	977	11.8	61	310	7.0
850	31	1,454	9.9	58	316	8.9
800	31	1,957	7.6	51	315	10.3
750	31	2,486	5.1	47	305	11.5
700	31	3,047	1.9	46	305	12.2
650	31	3,635	- 1.8	45	302	11.1
600	31	4,274	- 6.0	43	302	10.5
550	31	4,942	-10.7	40	308	11.3
500	31	5,678	-15.6	37	301	11.9
450	31	6,459	-21.2	35	292	13.6
400	31	7,325	-27.5	33	292	16.9
350	31	8,272	-34.5		289	18.8
300	31	9,332	-42.7		278	20.0
250	31	10,538	-51.3		273	21.0
200	31	11,963	-57.8		269	25.8
175	31	12,804	-58.4		270	26.0
150	31	13,776	-57.2		272	21.6
125	31	14,930	-57.3		273	18.5
100	31	16,339	-58.3		269	13.8
80	31	17,743	-58.0		270	8.9
60	31	19,563	-56.0		259	2.5
50	31	20,726	-54.5		71	1.7
40	30	22,162	-53.0		79	4.1
30	30	24,023	-51.3		65	4.7
25	29	25,210	-49.8		66	4.3
20	27	26,674	-48.5		61	4.9
15	22	28,590	-45.1		61	3.5
10	8	31,315	-40.7			

PEORIA, ILL. (988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	201	10.7	87	240	1.7
1,000	31	95				
950	31	522	12.4	69	256	7.8
900	31	978	9.9	69	270	9.9
850	31	1,452	7.4	67	281	12.8
800	31	1,949	5.2	63	286	12.2
750	31	2,470	2.8	56	295	12.0
700	31	3,031	.1	53	291	11.9
650	31	3,618	- 2.9	47	302	14.0
600	31	4,253	- 6.4	42	298	15.2
550	31	4,922	-10.7	39	298	16.5
500	31	5,656	-15.4	36	297	18.3
450	31	6,435	-20.8		296	19.8
400	31	7,304	-27.2	36	296	22.9
350	31	8,253	-34.2		292	24.5
300	31	9,314	-42.0		299	25.5
250	31	10,526	-50.5		296	29.3
200	31	11,959	-56.2		277	31.5
175	31	12,805	-57.3		273	30.1
150	31	13,783	-56.2		269	26.4
125	30	14,943	-56.8		269	22.9
100	30	16,355	-58.1		269	16.7
80	29	17,758	-58.3		309	8.0
60	29	19,574	-56.6		336	2.5
50	29	20,735	-54.7		50	4.5
40	28	22,164	-52.8		61	5.2
30	26	24,025	-50.8		67	5.6
25	23	25,222	-49.3		62	4.5
20	20	26,694	-47.0		27	2.9
15	11	28,613	-43.8			
10						

PITTSBURGH, PA. (972 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	27	353	10.5	82	210	2.3
1,000	27	118				
950	27	551	11.2	76	209	5.2
900	27	998	9.2	74	240	10.1
850	27	1,470	6.7	76	246	11.1
800	27	1,966	3.9	73	247	12.8
750	27	2,488	1.3	67	252	12.2
700	27	3,043	- 1.4	58	261	13.8
650	27	3,630	- 4.3	54	252	16.3
600	27	4,258	- 8.2	50	251	17.9
550	27	4,925	-12.5		254	19.2
500	27	5,650	-17.4		259	21.0
450	27	6,426	-22.8		259	22.2
400	27	7,287	-29.0		265	24.7
350	27	8,229	-35.9		264	27.6
300	27	9,285	-42.8		267	33.2
250	27	10,496	-49.8		276	34.4
200	27	11,940	-54.2		281	30.1
175	27	12,794	-55.2		271	27.0
150	27	13,776	-56.5		268	22.0
125	27	14,935	-57.2		264	15.3
100	27	16,343	-58.6		274	12.0
80	27	17,746	-58.0		271	6.8
60	27	19,565	-56.3		340	1.4
50	27	20,728	-54.7		77	4.9
40	26	22,165	-52.9		72	5.6
30	26	24,029	-51.0		82	6.6
25	26	25,219	-49.6		73	6.2
20	24	26,678	-47.8		110	5.2
15	23	28,605	-43.3		96	1.4
10	16	31,378	-37.5			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

POINT ARGUELLO, CALIF. (1002 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	113	9.8	95	311	5.8
1,000	31	130	10.0	92	315	5.8
950	31	562	12.8	63	349	14.8
900	31	1,013	13.3	47	3	17.1
850	31	1,493	12.3	33	350	16.5
800	31	1,999	10.7	25	334	15.5
750	31	2,535	8.1	22	322	14.6
700	31	3,100	4.7		306	12.0
650	31	3,696	.8		289	13.8
600	31	4,337	- 3.3	24	287	16.3
550	31	5,013	- 7.6		282	18.5
500	31	5,755	-12.5		277	22.0
450	31	6,546	-18.4		276	24.1
400	31	7,420	-25.3		276	27.0
350	31	8,375	-32.9		274	31.7
300	31	9,441	-41.4		277	38.3
250	31	10,654	-50.7		276	41.4
200	31	12,078	-59.4		276	45.3
175	31	12,909	-61.7		276	46.2
150	31	13,864	-61.7		273	43.3
125	31	14,993	-62.2		270	39.8
100	31	16,368	-63.4		267	30.3
80	31	17,736	-63.0		270	19.6
60	31	19,520	-59.4		276	3.3
50	31	20,668	-56.7		86	1.4
40	31	22,089	-54.5		94	5.8
30	31	23,937	-52.8		81	7.0
25	30	25,116	-51.3		78	7.6
20	29	26,566	-49.4		69	7.8
15	29	28,464	-46.4		80	5.2
10	26	31,173	-42.9		43	1.0
7	17	33,627	-39.5		16	3.3
5	11	35,919	-37.1			

PORTLAND, ME. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	20	11.2	88	73	1.9
1,000	31	125			65	2.3
950	31	553	11.9	64	152	1.4
900	31	1,004	10.3	63	200	2.7
850	31	1,479	7.4	64	188	6.4
800	31	1,976	5.0	60	196	5.2
750	31	2,500	2.1	58	198	5.4
700	31	3,054	- .7	49	225	4.9
650	30	3,640	- 3.5	42	233	6.8
600	30	4,274	- 7.0	41	254	7.8
550	30	4,941	-11.5	40	261	8.0
500	30	5,672	-16.2	38	259	8.9
450	30	6,447	-21.9	36	260	9.1
400	30	7,313	-28.3		269	8.4
350	30	8,259	-35.0		276	10.9
300	30	9,317	-42.9		271	15.0
250	30	10,525	-51.0		271	17.9
200	30	11,956	-56.3		271	20.6
175	30	12,802	-56.9		268	19.8
150	30	13,781	-56.0		266	20.0
125	30	14,940	-56.7		273	15.2
100	30	16,353	-57.0		282	12.6
80	29	17,767	-56.9		289	6.6
60	29	19,597	-54.8		22	.8
50	28	20,765	-53.0		84	2.5
40	28	22,211	-51.3		70	2.7
30	28	24,087	-50.0		80	5.4
25	28	25,280	-49.1		82	4.9
20	27	26,754	-46.9		78	2.5
15	20	28,667	-43.7		51	1.7
10	15	31,431	-38.0			
7	6	33,868	-35.3			
5						

RAPID CITY, S. DAK. (902 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	966	7.2	69	321	3.3
1,000	31	106				
950	31	530				
900	31	982			307	4.7
850	31	1,459	9.8	51	287	4.9
800	31	1,961	7.9	47	288	6.8
750	31	2,486	4.8	44	286	9.5
700	31	3,051	1.2	44	285	11.9
650	31	3,635	- 3.0	46	285	13.6
600	31	4,273	- 7.5	46	282	15.9
550	31	4,936	-12.0	42	281	17.1
500	31	5,668	-17.0	40	279	19.8
450	31	6,443	-22.6	38	278	22.0
400	31	7,306	-29.1	37	274	22.7
350	31	8,247	-36.1		272	26.2
300	31	9,299	-44.1		268	28.0
250	31	10,498	-53.1		262	31.1
200	31	11,912	-59.0		264	29.9
175	31	12,750	-58.5		265	28.6
150	31	13,723	-56.7		261	24.1
125	31	14,880	-56.4		257	19.8
100	31	16,294	-57.3		260	13.4
80	31	17,709	-56.3		248	9.5
60	31	19,544	-54.9		261	2.7
50	31	20,713	-53.5			.0
40	29	22,151	-52.4		65	2.1
30	28	24,012	-51.2		78	5.1
25	27	25,197	-49.9		78	4.9
20	25	26,661	-48.5		54	3.5
15	19	28,566	-45.8		14	3.3
10	7	31,306	-41.1			
7						
5						

ST. CLOUD, MINN. (975 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	316	7.7	83	351	3.9
1,000	31	101				
950	31	530	10.2	66	24	6.0
900	31	977	9.4	59	68	3.9
850	31	1,449	7.4	58	360	2.5
800	31	1,947	5.0	50	360	4.5
750	31	2,471	2.4	44	337	5.4
700	31	3,026	- .3	42	329	6.0
650	31	3,611	- 3.6	42	317	8.5
600	31	4,244	- 7.6	44	312	9.5
550	31	4,911	-11.9	39	304	11.5
500	31	5,640	-16.7	36	300	13.4
450	31	6,419	-21.1	36	298	15.0
400	31	7,279	-28.6	36	294	14.8
350	31	8,221	-35.7		290	16.1
300	31	9,276	-44.0		274	20.8
250	31	10,476	-52.6		266	26.2
200	31	11,897	-58.0		266	32.6
175	31	12,738	-57.5		272	28.2
150	31	13,716	-55.4		270	21.6
125	31	14,879	-55.8		263	16.5
100	30	16,297	-56.0		264	13.0
80	30	17,717	-55.7		260	7.8
60	30	19,554	-54.2		258	2.5
50	30	20,726	-53.1		38	2.5
40	29	22,169	-52.2		77	5.6
30	28	24,037	-50.5		71	8.2
25	27	25,228	-49.2		68	6.6
20	27	26,701	-47.5		65	6.8
15	17	28,622	-44.3		85	8.9
10	7	31,278	-41.5			
7						
5						

ST. PAUL IS., ALASKA (1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	0.0	91	346	2.1
1,000	31	75	- .4	90	356	3.9
950	31	486	- 1.2	85	319	1.9
900	31	916	- 1.9	79	280	1.4
850	31	1,370	- 3.3	70	228	1.7
800	31	1,849	- 5.2	60	194	2.3
750	31	2,349	- 7.4	53	186	2.9
700	31	2,889	-10.1	48	122	1.7
650	31	3,454	-13.0	46	123	2.5
600	31	4,063	-16.6	46	112	3.5
550	31	4,707	-20.5	44	101	3.1
500	31	5,412	-25.2	45	113	4.5
450	31	6,162	-30.6	45	98	6.0
400	31	6,997	-36.7	42	97	5.6
350	31	7,909	-43.1		93	6.4
300	31	8,934	-49.0		91	8.4
250	31	10,123	-51.1		120	4.9
200	30	11,582	-49.9		177	2.1
175	30	12,457	-49.3		179	3.9
150	29	13,475	-48.9		193	5.6
125	28	14,664	-49.1		156	3.1
100	28	16,126	-50.1		137	3.3
80	27	17,579	-50.0		120	5.1
60	27	19,461	-49.7		120	7.0
50	27	20,655	-49.7		109	8.0
40	26	22,115	-50.0		101	9.3
30	26	23,995	-49.9		97	10.5
25	22	25,197	-49.6		93	13.6
20	11	26,693	-48.2		91	17.3
15	6	28,584	-47.4			
10						
7						
5						

SALEM, OREG. (1010 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	7.1	94	178	3.3
1,000	31	140	8.4	87	184	3.7
950	31	561	6.9	80	203	5.2
900	31	1,007	4.6	79	221	8.0
850	31	1,471	2.0	79	228	12.0
800	31	1,959	.0	71	227	14.6
750	31	2,470	- 2.5	62	226	14.6
700	31	3,018	- 5.7	59	230	17.5
650	31	3,590	- 9.0	56	235	21.2
600	31	4,211	-12.7	52	237	23.5
550	31	4,865	-16.8	53	241	25.5
500	31	5,580	-21.6	49	248	25.5
450	31	6,343	-26.9	45	246	30.1
400	31	7,188	-32.9	41	253	33.8
350	31	8,114	-39.3		258	37.3
300	31	9,156	-45.6		260	40.6
250	31	10,354	-52.0		263	43.5
200	31	11,786	-55.2		260	41.4
175	31	12,640	-54.9		261	34.8
150	31	13,626	-54.3		263	29.3
125	31	14,796	-53.9		260	23.3
100	30	16,226	-55.1		253	18.3
80	30	17,653	-54.3		250	9.7
60	29	19,497	-53.9		249	4.3
50	29	20,668	-53.6		151	1.4
40	28	22,102	-53.0			.0
30	27	23,960	-52.5		84	3.9
25	26	25,139	-51.9		83	2.7
20	24	26,586	-50.3		7	.6
15	22	28,468	-47.5		358	3.3
10	14	31,170	-42.2		39	7.8
7	8	33,580	-38.4			

SALT LAKE CITY, UTAH (870 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,288	8.6	62	145	4.1
1,000	31	113				
950	31	544				
900	31	1,000				
850	31	1,480	12.1	42	151	4.7
800	31	1,985	9.9	36	183	4.5
750	31	2,520	6.1	39	230	4.9
700	31	3,080	2.0	44	255	7.8
650	31	3,670	- 2.4	46	258	13.2
600	31	4,304	- 6.8	46	260	18.1
550	31	4,973	-11.8	49	252	21.2
500	31	5,702	-16.9	45	252	22.5
450	31	6,476	-22.8	40	250	25.6
400	31	7,338	-29.2	38	249	28.8
350	31	8,278	-36.5		252	30.9
300	31	9,329	-44.6		254	32.6
250	31	10,528	-52.7		264	34.8
200	30	11,948	-58.3		265	35.4
175	29	12,779	-58.2		268	34.4
150	28	13,747	-57.4		260	30.7
125	28	14,899	-57.8		262	26.0
100	28	16,307	-58.3		263	18.3
80	28	17,710	-58.3		258	10.5
60	28	19,527	-56.5		267	2.1
50	28	20,687	-55.1		179	.6
40	28	22,116	-53.9		62	2.9
30	26	23,970	-52.6		62	4.9
25	26	25,150	-51.3		53	4.1
20	26	26,606	-49.3		68	2.9
15	25	28,498	-46.5		37	3.9
10	20	31,187	-42.6		65	1.6
7	10	33,554	-39.1			

SAN ANTONIO, TEX. (984 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	243	18.6	87	133	2.3
1,000	31	107				
950	31	542	18.3	80	148	7.6
900	31	1,013	16.9	69	174	12.4
850	31	1,500	16.2	55	187	15.0
800	31	2,014	14.3	48	203	10.9
750	31	2,554	11.7	36	222	7.6
700	31	3,130	8.3	31	264	6.4
650	31	3,732	4.0	38	286	9.7
600	31	4,383	- 1.0	29	281	12.2
550	31	5,064	- 6.4	33	278	16.9
500	31	5,808	-12.2	36	273	19.4
450	31	6,604	-17.3		278	22.7
400	31	7,480	-23.7		276	29.1
350	31	8,442	-30.6		282	33.8
300	31	9,519	-38.8		272	38.7
250	31	10,745	-48.1		277	45.5
200	31	12,187	-57.2		282	50.3
175	31	13,024	-60.6		279	52.1
150	31	13,978	-62.8		291	43.7
125	31	15,097	-64.7		282	34.8
100	31	16,452	-66.5		285	12.8
80	31	17,802	-65.9		296	9.5
60	30	19,566	-60.5		92	9.7
50	30	20,710	-56.4		106	16.7
40	28	22,138	-53.3		90	12.4
30	26	24,000	-50.4			
25	26	25,195	-47.8			
20	23	26,681	-45.1			
15	22	28,611	-42.0			
10	15	31,401	-36.0			
7						

SAN DIEGO, CALIF. (998 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	124	13.1	90	179	1.4
1,000	31	106				
950	31	538	15.1	64	199	1.7
900	31	996	14.0	55	330	2.7
850	31	1,478	13.3	38	317	7.4
800	31	1,988	11.9	28	305	9.3
750	31	2,522	9.0	25	299	8.4
700	31	3,094	6.0	23	292	10.3
650	31	3,693	2.5		286	12.4
600	31	4,341	- 1.7		280	14.8
550	31	5,019	- 6.2		279	17.3
500	31	5,768	-11.6		279	19.4
450	31	6,557	-17.6		280	22.3
400	31	7,440	-24.6		285	23.9
350	31	8,398	-31.9		286	28.6
300	30	9,468	-40.3		287	35.2
250	30	10,687	-49.9		285	39.8
200	30	12,116	-58.9		282	46.8
175	30	12,951	-60.4		278	46.2
150	30	13,908	-61.8		276	45.3
125	30	15,034	-63.2		274	40.0
100	30	16,400	-65.1		271	27.6
80	30	17,760	-64.8		274	20.4
60	30	19,532	-60.4		252	2.5
50	30	20,675	-57.8		102	2.9
40	30	22,094	-55.0		85	7.4
30	29	23,946	-52.4		80	9.3
25	29	25,129	-50.9		82	10.5
20	26	26,583	-48.6		77	7.8
15	21	28,490	-46.2		71	8.5
10	12	31,243	-41.5		32	3.9
7	6	33,730	-38.0			

SAN JUAN, P. R. (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	24.6	82	133	3.5
1,000	31	132	24.4	76	118	9.5
950	31	584	21.8	76	111	12.8
900	31	1,050	19.0	74	117	12.0
850	31	1,540	16.2	71	121	9.5
800	31	2,054	13.7	64	116	6.6
750	31	2,595	11.1	54	115	6.0
700	31	3,170	8.1	45	136	3.1
650	31	3,773	5.0	43	186	1.9
600	31	4,428	1.5	36	244	2.9
550	31	5,115	- 2.6	34	255	6.4
500	31	5,873	- 7.1	31	262	7.8
450	31	6,684	-12.4	28	272	8.9
400	31	7,577	-18.6	29	272	10.3
350	29	8,557	-25.8		282	15.7
300	29	9,655	-34.2		284	20.0
250	29	10,905	-44.1		288	26.8
200	29	12,363	-55.9		291	32.4
175	29	13,201	-61.9		295	35.6
150	29	14,141	-68.5		294	37.7
125	29	15,219	-73.9		295	32.8
100	29	16,509	-76.5		297	20.6
80	29	17,796	-75.1		310	8.0
60	28	19,499	-66.5		69	12.4
50	27	20,617	-61.4		87	21.2
40	27	22,015	-57.0		94	24.1
30	25	23,853	-52.7		94	24.5
25	20	25,041	-49.5		92	28.6
20	10	26,514	-46.3			
15	7	28,425	-41.4			
10						
7						

SANTA MONICA, CALIF. (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	14.1	83	38	2.3
1,000	31	111	14.5	77	53	2.5
950	31	544	14.9	60	61	3.9
900	31	1,003	14.4	45	4	5.1
850	31	1,484	12.8	37	320	6.0
800	31	1,992	11.0	28	303	7.8
750	31	2,522	8.3	20	298	9.1
700	31	3,095	5.1		293	9.7
650	31	3,688	1.6		291	12.4
600	31	4,337	- 2.6		283	14.4
550	31	5,011	- 7.2		279	16.3
500	31	5,759	-12.5		278	18.5
450	31	6,545	-18.4		278	21.6
400	31	7,426	-25.0		276	24.3
350	31	8,382	-32.5		283	28.2
300	31	9,450	-40.8		282	32.4
250	31	10,665	-50.4		283	36.9
200	31	12,089	-59.6		281	39.8
175	31	12,920	-61.3		278	43.1
150	31	13,875	-62.0		275	41.0
125	31	15,001	-62.7		272	37.1
100	31	16,370	-64.5		270	30.1
80	30	17,734	-64.0		273	19.2
60	30	19,512	-59.8		287	5.1
50	28	20,655	-57.4		359	1.4
40	26	22,065	-55.2		81	2.7
30	24	23,908	-53.1		72	7.0
25	24	25,085	-52.2		66	7.0
20	22	26,536	-50.1		70	6.6
15	17	28,391	-48.8		80	5.4
10						
7						

SAULT STE. MARIE, MICH. (985 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	221	7.6	85	66	3.3
1,000	31	98				
950	31	523	9.4	77	88	5.6
900	31	971	8.2	74	121	5.4
850	31	1,442	6.2	75	156	5.6
800	31	1,938	3.7	70	156	4.1
750	30	2,459	1.5	64	136	4.3
700	30	3,015	- 1.2	62	129	4.7
650	30	3,599	- 4.3	58	141	4.3
600	30	4,231	- 7.7	51	162	3.3
550	30	4,897	-12.1	46	184	1.6
500	30	5,626	-17.2	44	258	2.1
450	30	6,400	-22.8	44	234	1.7
400	30	7,262	-29.1	43	255	1.9
350	30	8,202	-36.5	44	315	1.6
300	30	9,253	-44.3		319	5.2
250	30	10,454	-51.9		305	11.7
200	30	11,884	-55.5		289	16.9
175	30	12,734	-56.1		285	15.3
150	30	13,715	-55.1		277	15.0
125	30	14,877	-55.7		274	12.6
100	29	16,297	-57.0		277	8.9
80	29	17,709	-56.8		274	4.9
60	28	19,536	-55.8		303	1.2
50	27	20,698	-54.5		59	2.5
40	27	22,130	-53.3		72	4.5
30	26	23,987	-51.6		87	7.4
25	26	25,172	-50.7		91	7.6
20	26	26,631	-48.9		92	7.6
15	18	28,530	-45.5		96	4.9
10	10	31,162	-43.5			
7						

SEATTLE, WASH. (1001 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	125	8.2	89	195	6.6
1,000	31	136			169	4.5
950	31	559	6.6	80	214	11.3
900	31	1,001	4.2	77	215	12.2
850	31	1,464	1.7	76	213	12.2
800	31	1,951	- .9	74	217	10.7
750	31	2,461	- 3.7	68	230	11.5
700	31	3,006	- 6.7	62	225	14.2
650	31	3,575	-10.2	55	226	16.7
600	31	4,194	-13.9	54	229	18.1
550	31	4,845	-18.1	55	229	19.6
500	31	5.556	-22.7	54	233	24.1
450	31	6,315	-28.1	52	234	27.8
400	31	7,157	-34.4	49	237	30.7
350	31	8,077	-41.1		239	33.2
300	31	9,110	-47.0		246	37.1
250	31	10,304	-52.1		253	41.4
200	31	11,741	-53.5		251	38.7
175	31	12,602	-52.7		251	34.2
150	31	13,600	-52.1		249	27.8
125	31	14,780	-52.3		250	21.6
100	31	16,222	-52.9		251	12.4
80	31	17,662	-53.2		241	8.4
60	31	19,522	-52.5		231	3.7
50	31	20,702	-52.3		176	1.4
40	31	22,148	-52.0		86	.8
30	30	24,016	-51.3		64	2.9
25	28	25,206	-50.3		72	2.7
20	24	26,667	-49.0		74	2.9
15	17	28,565	-46.5		346	.6
10	8	31,310	-40.5			
7						

SHEMYA, ALASKA (1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	2.6	89	310	3.7
1,000	31	101			1	5.6
950	31	507	- .7	89	332	5.2
900	31	943	- 3.3	89	337	4.7
850	31	1,394	- 5.2	82	352	3.9
800	31	1,868	- 7.3	72	320	4.3
750	31	2,308	- 9.3	65	303	4.9
700	31	2,901	-11.8	62	304	5.6
650	31	3,462	-14.9	57	321	5.2
600	31	4,068	-18.3	52	320	6.8
550	31	4,706	-22.6	49	287	4.9
500	31	5,406	-27.0	45	310	5.8
450	31	6,152	-32.4	45	279	7.6
400	31	6,979	-38.2		294	8.2
350	31	7,887	-43.9		276	11.9
300	31	8,911	-48.6		280	13.0
250	31	10,107	-49.2		275	12.2
200	31	11,569	-49.8		268	16.5
175	31	12,444	-49.5		270	13.0
150	31	13,454	-49.5		276	10.9
125	31	14,646	-50.4		269	8.0
100	30	16,097	-51.2		269	4.9
80	30	17,550	-50.8		253	1.4
60	30	19,427	-50.4		96	5.4
50	30	20,618	-50.3		105	5.8
40	29	22,078	-50.4		95	7.2
30	28	23,960	-50.3		95	8.5
25	23	25,140	-49.9		99	7.8
20	11	26,596	-49.5			
15						
10						
7						

SHREVEPORT, LA. (1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	27	76	16.6	87	186	3.3
1,000	27	121	17.7	81	181	3.5
950	27	560	17.9	63	220	8.0
900	27	1,022	15.8	57	229	10.7
850	27	1,506	13.6	49	246	11.5
800	27	2,015	11.6	35	266	12.6
750	27	2,547	8.4	36	277	15.7
700	27	3,119	4.9	33	278	16.5
650	27	3,709	1.0	31	279	17.1
600	27	4,358	- 3.4	32	280	18.5
550	27	5,031	- 8.1	35	277	20.0
500	27	5,775	-13.1		278	23.7
450	27	6,559	-18.4		279	28.2
400	27	7,439	-25.0		279	30.5
350	27	8,396	-31.9		279	32.8
300	27	9,469	-39.9		279	35.4
250	27	10,689	-49.3		277	36.5
200	27	12,122	-58.0		276	42.6
175	27	12,957	-61.0		273	40.8
150	27	13,912	-62.0		272	35.9
125	27	15,038	-62.6		273	31.3
100	27	16,409	-64.4		273	20.0
80	27	17,770	-64.1		286	7.6
60	27	19,550	-59.6		70	2.3
50	27	20,698	-56.3		87	4.7
40	25	22,117	-53.1		82	5.1
30	25	23,982	-50.4		81	5.4
25	25	25,176	-48.5		81	7.4
20	25	26,653	-45.9		75	6.2
15	25	28,581	-42.6		82	6.2
10	22	31,338	-38.8		311	4.9
7	5	33,805	-35.5			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

SPOKANE, WASH. (93[illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	722	6.6	81	188	5.8
1,000--	31	118				
950----	31	545				
900----	31	991	7.4	69	207	8.2
850----	31	1,461	5.8	61	231	11.3
800----	31	1,954	2.3	62	228	11.9
750----	31	2,470	- 1.3	65	233	14.4
700----	31	3,019	- 4.9	62	237	14.0
650----	31	3,592	- 8.7	59	239	15.3
600----	31	4,214	-12.6	51	239	17.7
550----	31	4,867	-17.0	49	241	19.8
500----	31	5,582	-21.7	45	243	23.1
450----	31	6,342	-27.1	39	245	24.7
400----	31	7,189	-33.4	41	247	28.0
350----	31	8,113	-40.3		248	30.1
300----	31	9,149	-47.0		253	35.2
250----	31	10,342	-52.1		256	39.1
200----	31	11,780	-53.0		253	37.1
175----	31	12,643	-52.4		248	31.1
150----	31	13,640	-52.3		250	23.7
125----	31	14,819	-52.2		248	17.9
100----	30	16.264	-53.1		242	13.0
80-----	30	17,702	-53.0		243	7.8
60-----	29	19,557	-52.3		260	2.3
50-----	29	20,738	-51.5			.0
40-----	29	22,186	-51.3		91	3.1
30-----	29	24,055	-50.8		78	3.3
25-----	28	25,241	-49.5		92	5.1
20-----	28	26,710	-47.1		88	4.7
15-----	25	28,626	-43.9		79	8.2
10-----	13	31,316	-40.7		74	8.0
7------	6	33,725	-38.5			

SWAN ISLAND, W. I. (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	23	10	27.0	85	88	6.6
1,000--	23	103	26.0	85	89	8.2
950----	23	555	21.7	85	102	10.5
900----	23	1,022	18.6	82	110	9.3
850----	23	1,512	15.8	76	115	8.0
800----	23	2,025	13.2	69	118	6.6
750----	23	2,569	10.5	61	115	4.9
700----	23	3,139	7.6	56	118	3.9
650----	23	3,746	4.6	50	106	3.3
600----	22	4,396	.9	47	64	1.2
550----	22	5,086	- 2.9		303	2.1
500----	22	5,841	- 7.3		291	3.7
450----	20	6,656	-12.4		290	4.9
400----	20	7,545	-18.6		292	9.1
350----	20	8.528	-25.3		285	13.6
300----	20	9,630	-33.6		274	16.3
250----	17	10,885	-43.5		272	21.8
200----	17	12,349	-55.4		266	24.5
175----	17	13,188	-62.0		267	26.8
150----	15	14,126	-69.3		265	27.2
125----	14	15,196	-76.3		270	24.3
100----	12	16,480	-77.9		276	14.2
80-----	12	17,758	-75.5		232	2.7
60-----	12	19,455	-66.9		86	11.9
50-----	12	20,569	-61.6		87	15.5
40-----	11	21,974	-57.9		88	23.3
30-----	11	23,807	-53.1		89	26.8
25-----	11	24,983	-50.4		85	30.7
20-----	11	26,451	-46.4		91	36.7
15-----	8	28,330	-42.4			

TAMPA, FLA. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	8	19.9	86	70	2.5
1,000--	31	135	20.6	77	106	2.3
950----	31	581	19.3	66	205	2.3
900----	31	1,042	16.6	67	230	3.1
850----	31	1,528	14.4	59	248	3.7
800----	31	2,038	11.9	53	270	4.7
750----	30	2,572	9.3	45	266	7.8
700----	30	3,140	6.3	39	269	9.5
650----	30	3,742	2.5	37	275	10.7
600----	30	4,389	- 2.0	34	283	13.2
550----	30	5,071	- 6.5	31	293	14.4
500----	30	5,815	-10.8		287	19.6
450----	30	6,611	-16.2		281	23.3
400----	30	7,494	-22.6		282	26.6
350----	30	8,460	-29.4		285	29.3
300----	30	9,545	-37.5		281	32.3
250----	30	10,781	-46.5		278	41.6
200----	30	12,232	-56.0		277	48.8
175----	28	13,081	-60.9		271	52.8
150----	27	14,029	-65.0		268	49.4
125----	27	15,138	-66.9		274	36.7
100----	26	16,474	-69.8		282	25.1
80-----	24	17,809	-69.2		295	13.4
60-----	21	19,561	-62.8		8	6.6
50-----	21	20,697	-58.0		58	6.4
40-----	20	22,115	-54.3		66	5.6
30-----	17	23,975	-50.3		98	23.9
25-----	13	25,176	-48.1			
20-----	11	26,648	-45.0			
15-----	6	28,570	-41.5			

TATOOSH IS., WASH. (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	31	9.5	83	189	4.1
1,000--	30	121	8.9	82	213	6.0
950----	30	538	6.2	80	214	10.3
900----	30	986	3.3	81	215	11.9
850----	30	1,447	.6	79	210	13.2
800----	30	1,932	- 2.0	73	208	13.8
750----	30	2,438	- 4.6	67	208	14.8
700----	30	2,983	- 7.6	67	209	16.5
650----	30	3,550	-11.2	61	218	18.1
600----	30	4,166	-15.2	55	221	19.6
550----	30	4,810	-19.3	51	229	22.5
500----	30	5,521	-24.1	46	230	24.5
450----	30	6,269	-29.6	47	231	28.2
400----	30	7,112	-35.7	47	232	28.4
350----	30	8,028	-42.3		244	32.1
300----	30	9,058	-47.7		246	34.6
250----	30	10,251	-51.6		254	36.9
200----	30	11,693	-52.3		250	32.3
175----	30	12,559	-51.6		247	27.8
150----	30	13,562	-50.8		246	21.8
125----	30	14,749	-51.0		249	15.3
100----	30	16,196	-52.7		249	8.5
80-----	30	17,639	-52.2		235	5.4
60-----	29	19,501	-52.3			.0
50-----	28	20,678	-52.0			.0
40-----	24	22,124	-51.8			.0
30-----	20	23,982	-51.6		63	3.1
25-----	20	25,167	-50.8		36	3.7
20-----	16	26,630	-49.0		66	3.7
15-----	10	28,515	-45.9		37	5.1
10-----	5	31,201	-41.5			

TOPEKA, KANS. (980 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	269	12.1	82	210	1.9
1,000--	31	99				
950----	31	531	14.0	66	248	5.2
900----	31	987	12.6	58	268	8.0
850----	31	1,466	10.5	55	287	10.1
800----	31	1,969	8.1	48	291	11.7
750----	31	2,496	5.1	46	289	14.6
700----	31	3,060	2.0	43	298	16.7
650----	31	3,650	- 1.8	43	303	16.7
600----	31	4,286	- 6.0	41	302	15.7
550----	31	4,956	-10.4		296	18.5
500----	31	5,690	-15.3		297	20.0
450----	31	6,471	-20.9		292	18.8
400----	31	7,339	-27.3		290	18.8
350----	31	8,286	-34.5		287	19.4
300----	31	9,346	-42.3		281	21.6
250----	31	10,556	-50.7		271	25.5
200----	31	11,984	-57.6		274	34.6
175----	31	12,825	-58.7		276	32.3
150----	31	13,796	-57.3		273	26.4
125----	30	14,952	-58.4		273	20.4
100----	30	16,354	-59.2		275	15.3
80-----	30	17,749	-59.6		282	8.5
60-----	29	19,557	-57.4		58	3.1
50-----	27	20,712	-55.2		99	5.2
40-----	26	22,146	-53.2		61	5.1
30-----	24	24,006	-51.6		75	7.2
25-----	24	25,194	-50.0		82	6.4
20-----	19	26,647	-47.9		78	4.9
15-----	13	28,563	-45.4		71	5.6

TUCSON, ARIZ. (922 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	781	14.4	35	143	5.6
1,000--	31	84				
950----	31	520				
900----	31	991	20.5	24	164	3.5
850----	31	1.482	18.0	25	237	2.9
800----	31	1,997	14.5	27	235	5.1
750----	31	2,531	10.5	28	233	7.4
700----	31	3,108	6.4	27	222	11.1
650----	31	3,705	2.4	23	229	12.8
600----	31	4,353	- 1.9		236	16.5
550----	31	5,028	- 6.5		245	18.7
500----	31	5,777	-11.6		254	21.8
450----	31	6,565	-17.3		261	24.5
400----	31	7,449	-24.2		263	27.8
350----	31	8,408	-31.5		267	29.9
300----	31	9,481	-40.0		269	34.2
250----	31	10,700	-49.6		266	38.9
200----	31	12,130	-58.3		266	47.4
175----	31	12,966	-60.0		268	48.2
150----	31	13,926	-61.1		271	42.0
125----	30	15,052	-63.0		271	36.3
100----	30	16,418	-65.4		268	29.7
80-----	29	17,777	-65.5		274	15.5
60-----	28	19,547	-60.4			.0
50-----	28	20,691	-57.6		71	4.9
40-----	28	22,111	-54.4		89	8.0
30-----	28	23,967	-51.6		82	10.3
25-----	27	25,154	-49.7		85	10.9
20-----	25	26,614	-47.5		76	9.1
15-----	23	28,532	-44.5		85	8.5
10-----	22	31,269	-39.7		286	2.5
7------	8	33,655	-36.9			

WASHINGTON, D. C. (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	88	13.3	83	138	1.0
1,000--	31	117			128	1.4
950----	31	549	12.6	73	220	3.1
900----	31	1,002	10.7	72	242	5.6
850----	31	1,477	8.1	70	247	7.0
800----	31	1,976	5.5	65	251	9.1
750----	31	2,499	2.8	60	248	13.0
700----	31	3,057	.0	56	246	14.0
650----	31	3,646	- 3.0	46	250	17.3
600----	31	4,278	- 6.6	39	254	18.3
550----	31	4,946	-10.8	38	257	20.4
500----	31	5,679	-15.7		260	23.3
450----	31	6.452	-21.3		258	24.1
400----	31	7,324	-27.8		260	26.2
350----	31	8,270	-34.7		258	28.8
300----	31	9,330	-42.0		261	34.0
250----	31	10,543	-49.8		263	38.1
200----	31	11,982	-55.7		267	35.9
175----	31	12,831	-56.5		267	33.4
150----	31	13,808	-57.0		265	26.8
125----	31	14,960	-58.2		267	20.4
100----	31	16,360	-59.6		273	15.0
80-----	29	17,757	-59.4		287	7.0
60-----	28	19,568	-57.3		349	1.9
50-----	28	20,727	-54.8		60	3.9
40-----	28	22,162	-52.7		86	4.5
30-----	28	24,026	-50.8		62	3.3
25-----	26	25,213	-49.0		62	2.9
20-----	25	26,787	-46.7		219	.6
15-----	20	28,596	-43.1		202	.8
10-----	10	31,313	-37.6			

WINNEMUCCA, NEV. (868 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,310	4.8	59		0.0
1,000--	31	137				
950----	31	563				
900----	31	1,014				
850----	31	1,487	9.2	47	33	1.4
800----	31	1,988	6.7	44	266	5.6
750----	31	2,511	2.9	47	256	8.0
700----	31	3,070	- 1.0	48	250	11.9
650----	31	3,652	- 4.8	45	247	16.1
600----	31	4,282	- 9.3	45	246	20.4
550----	31	4,940	-13.6	44	248	24.7
500----	31	5,668	-18.3	39	251	27.6
450----	31	6,437	-23.3		256	31.3
400----	31	7,299	-29.8		256	33.0
350----	31	8,238	-37.0		253	35.2
300----	31	9,287	-44.6		257	41.0
250----	31	10,488	-52.0		264	44.7
200----	31	11,912	-57.6		268	39.1
175----	31	12,754	-57.8		267	36.3
150----	31	13,729	-56.9		261	32.6
125----	31	14,882	-57.8		261	27.8
100----	29	16,289	-58.3		254	19.4
80-----	28	17,691	-57.1		245	11.9
60-----	26	19,518	-55.2		254	2.5
50-----	24	20,684	-54.4		17	1.0
40-----	24	22,117	-53.3		82	4.3
30-----	24	23,975	-52.0		42	4.5
25-----	24	25,159	-50.7		49	4.3
20-----	23	26,615	-48.5		55	2.7
15-----	20	28,524	-45.3		19	3.3
10-----	12	31,287	-39.4			

YAKUTAT, ALASKA (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	12	4.9	90	84	1.9
1,000--	31	102	6.6	86	86	2.1
950----	31	519	5.6	76	119	2.9
900----	31	965	3.2	72	129	3.7
850----	31	1,426	.5	70	129	4.7
800----	31	1,911	- 2.4	69	130	5.6
750----	31	2,420	- 5.3	66	135	6.2
700----	30	2,962	- 8.2	67	121	7.2
650----	30	3,530	-12.0	64	105	8.9
600----	30	4,142	-15.8	59	101	8.9
550----	30	4,788	-20.0	52	98	10.9
500----	30	5,495	-25.0	47	96	12.8
450----	30	6,245	-30.7	46	88	15.2
400----	30	7,080	-36.9		79	16.7
350----	30	7,992	-43.4		66	18.8
300----	30	9,015	-49.5		59	20.6
250----	30	10,201	-52.2		46	21.4
200----	30	11,653	-49.7		75	16.3
175----	29	12,527	-48.9			
150----	28	13,544	-48.9			
125----	28	14,740	-49.5			
100----	28	16,200	-50.2			
80-----	28	17,658	-49.5			
60-----	27	19,548	-49.2			
50-----	27	20,742	-49.4			
40-----	27	22,203	-49.4			
30-----	27	24,089	-49.1			
25-----	25	25,280	-48.5			
20-----	24	26,750	-46.6			
15-----	14	28,697	-42.9			

YUMA, ARIZ. (996 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	105	15.9	32	5	1.6
1,000--	30	98				
950----	30	541	20.2	27	289	7.8
900----	30	1,004	17.8	27	292	7.8
850----	30	1,489	14.7	26	294	5.6
800----	30	1,998	10.9	27	267	6.4
750----	30	2,532	7.0	27	264	8.0
700----	30	3,095	3.5		268	7.2
650----	30	3,692	.0		274	12.6
600----	30	4,329	- 4.3		277	16.9
550----	30	5,008	- 8.7		275	21.4
500----	30	5,741	-14.2		280	26.4
450----	30	6,530	-20.5		280	28.6
400----	30	7,391	-27.0		280	32.4
350----	30	8,340	-34.5		282	35.6
300----	30	9,399	-42.8		280	42.4
250----	30	10,604	-52.0		282	48.2
200----	30	12,020	-60.3		279	53.8
175----	29	12,849	-60.4		278	55.0
150----	28	13,809	-60.8		277	48.2
125----	28	14,938	-62.6		276	44.1
100----	23	16,304	-64.3		263	34.0
80-----	21	17,665	-64.3		266	29.0
60-----	18	19,432	-61.7		267	13.0
50-----	14	20,573	-59.3		268	7.2
40-----	12	21,973	-56.7			.0
30-----	9	23,808	-54.5			
25-----	9	24,979	-52.9			
20-----	9	26,428	-50.4			

Note: All observations scheduled at 1200, G. C. T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant wind speed is biased toward a lower value as the number of observations on which the resultant is based lessens. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun

MAY 1960

Date	Sun's zenith distance								
	A M					P M			
	78.7°	75.7°	70.7°	60.0°	*	60.0°	70.7°	75.7°	78.7°
	ALBUQUERQUE, N. MEX.								
	Air mass								
	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
May									
1	0.67	0.75	0.86	0.99	----	---	0.89	0.76	0.65
6	.81	.88	.97	1.09	1.22	1.11	1.01	.89	.81
7	.81	.85	.97	1.07	1.23	1.05	.95	.85	.78
8	.75	.83	.93	1.03	----	----	----	----	.62
9	.72	.79	.90	1.03	1.17	1.06	----	.85	.78
10	.67	.81	.90	.99	1.15	.85	----	----	----
11	.71	.81	.89	1.00	1.15	1.08	1.01	.97	.93
12	.64	.70	.81	.94	1.13	.90	.88	.79	.69
13	.84	.96	1.06	1.11	1.13	----	----	----	----
14	.75	.85	.95	1.05	----	----	----	----	----
15	----	----	----	1.03	1.18	1.12	.90	.87	.80
16	.69	.78	.88	1.03	1.19	----	----	.88	.79
17	----	----	.93	1.04	1.18	----	----	----	----
18	.70	.81	.89	.96	----	1.02	.88	.79	----
19	----	----	----	----	----	----	1.01	.92	.85
20	.87	.96	.98	1.09	1.20	1.13	1.00	.91	.84
21	.89	.95	.97	1.07	1.16	.99	----	----	----
22	.91	.95	1.01	1.09	1.17	.98	----	----	.49
23	.76	.81	.91	1.03	1.18	----	----	----	----
24	.79	.84	.93	1.03	1.04	.97	.84	.73	.69
25	.74	.81	.90	.98	1.21	1.06	.94	.82	.97
26	.78	.86	.95	1.04	----	1.03	.94	.87	.81
27	----	----	.95	1.05	.51	----	----	----	----
28	.67	.74	.82	.97	1.11	.91	.77	.64	.53
29	----	----	----	----	1.11	----	----	----	----
30	----	----	----	----	.93	----	----	----	----
31	.41	----	----	.76	----	----	----	----	.51
Averages	0.77	0.84	0.93	1.03	1.18	1.05	0.93	0.84	0.79
	BLUE HILL OBS., MASS.								
	Air mass								
	4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
May									
2	----	----	----	----	----	1.22	1.06	0.94	0.84
3	----	----	0.89	1.10	----	----	.79	I .64	I .54
4	0.65	0.76	.91	1.08	----	.95	I .74	I .61	I .53
5	.79	.91	1.03	1.22	----	----	----	----	----
6	.79	.88	1.03	1.20	----	----	----	----	----
10	.74	.86	----	----	----	----	----	----	----
19	----	----	----	1.15	----	----	----	----	----
20	.60	.72	.84	1.04	----	----	----	----	----
26	----	----	----	----	----	1.15	.96	.82	.73
27	.71	.79	.91	.98	----	1.08	.92	.77	.69
28	.71	.83	.96	1.09	----	----	----	----	----
29	----	----	----	----	1.34	----	.95	.83	----
30	----	----	----	----	1.28	----	----	----	----
Averages	0.71	0.82	0.94	1.11	1.31	1.10	0.90	0.77	0.67
	GUAM, M. I.								
	Air mass								
	4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
May									
11	M 0.48	M 0.59	----	----	----	----	----	----	----

Date	Sun's zenith distance								
	A M					P M			
	78.7°	75.7°	70.7°	60.0°	*	60.0°	70.7°	75.7°	78.7°
	TUCSON, ARIZ.								
	Air mass								
	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
May									
1	0.78	0.89	0.99	1.20	1.36	----	----	----	----
5	----	----	----	----	H 1.39	1.20	1.03	0.89	0.79
6	----	----	1.03	1.18	1.41	----	----	----	----
7	.86	.95	1.07	1.23	1.42	1.18	1.02	.90	.79
8	.83	.93	1.07	1.24	1.39	1.19	1.01	.88	.78
9	----	----	----	----	1.39	----	----	----	----
11	----	----	1.02	1.18	----	----	----	----	----
12	----	----	----	----	----	1.17	1.01	.86	.75
13	.81	.91	1.04	----	----	----	----	----	----
15	.94	1.03	1.16	1.30	1.43	1.23	1.07	.95	.84
16	.88	.98	1.10	1.27	1.48	1.25	1.12	1.01	.91
18	----	----	----	----	1.41	1.18	1.03	.90	.80
20	----	----	----	----	1.42	----	----	----	----
21	----	----	----	----	1.40	1.20	1.06	.91	.82
22	.85	.95	1.07	1.23	1.41	1.23	1.06	.95	.84
23	----	----	----	----	----	----	1.10	.99	.88
24	.78	.88	1.02	1.18	1.43	1.25	1.06	.94	.82
25	.83	.93	1.03	1.21	1.47	1.23	1.09	.94	.85
26	.90	1.01	1.12	1.25	1.46	1.24	1.07	.95	.86
28	----	----	1.05	1.20	----	----	1.04	----	----
Averages	0.85	0.95	1.06	1.22	1.42	1.21	1.05	0.93	0.83
	MAUNA LOA OBS., HAWAII †								
	Air mass								
	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
May									
2	----	----	----	----	----	1.44	1.26	1.15	1.04
3	1.13	1.24	1.35	1.50	----	----	1.32	1.22	1.14
4	1.22	1.31	1.41	1.53	1.62	1.47	1.36	1.26	1.18
5	1.25	1.33	1.42	1.52	1.65	1.51	1.39	1.28	1.19
6	1.22	1.31	1.40	1.51	1.67	1.54	1.42	1.33	1.24
7	1.27	1.35	1.44	1.55	1.69	1.55	1.44	1.34	1.27
8	1.28	1.36	1.44	1.58	1.63	1.49	1.37	1.27	1.18
9	1.25	1.33	1.42	1.52	----	----	----	----	----
11	1.15	1.24	1.33	1.45	----	----	----	----	----
16	1.13	1.21	1.31	1.45	----	----	----	----	----
17	1.14	1.22	1.32	1.44	----	----	----	----	----
18	1.15	1.23	1.33	1.45	1.61	----	----	----	----
25	1.17	1.26	1.35	1.46	----	----	----	----	----
26	1.18	1.27	1.37	1.48	1.61	----	----	----	----
28	1.15	1.24	1.33	1.44					
30	1.21	1.29	1.38	1.50	1.63	1.46	1.34	1.24	1.16
Averages	1.19	1.28	1.37	1.49	1.64	1.49	1.36	1.26	1.18

*	Values Corresponding to true solar noon.
H	Haze.
M	Moderate haze - indeterminable.
†	Station closed May 23 through May 24.
I	Intense haze - indeterminable.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Albuquerque, N.Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska *	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill Obs.,Mass.	Boise, Idaho	Brownsville, Tex.	Canton Island Pacific Area	Cape Hatteras, N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.	Davis, Calif.	Dodge City, Kans.	El Paso, Tex.	Ely, Nev.	Flaming Gorge, Utah	Ft. Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Indianapolis, Ind.	Inyokern, Calif.	Lake Charles, La.	Lander, Wyo.	Laramie, Wyo.
May 6-----	780	---	453	530	211	296	915	525	788	685	664	354	586	447	594	655	469	210	125	676	503	784	799	770	691	619	540	626	770	642	683	406	217	814	329	738	681
May 7-----	787	---	246	157	557	132	768	617	783	638	366	678	344	446	495	386	61	609	414	639	735	792	508	609	785	604	---	675	771	258	336	118	133	798	539	653	675
May 8-----	---	---	662	632	596	580	626	316	337	346	688	663	489	429	579	585	260	775	698	697	682	798	685	667	763	610	---	586	717	569	173	---	173	803	706	732	612
May 9-----	775	---	173	626	636	642	746	132	713	228	663	633	---	818	327	710	106	754	590	719	670	794	798	723	618	635	782	731	743	669	650	790	155	804	662	737	693
May 10-----	757	---	358	232	263	545	810	185	775	649	702	630	597	796	375	360	214	448	432	719	765	740	688	740	600	622	607	703	745	655	631	710	77	800	550	737	693
May 11-----	747	---	276	601	224	349	615	327	759	(157)	534	622	579	684	101	484	87	594	459	696	799	745	778	742	738	592	767	563	764	478	334	509	208	809	650	674	721
May 12-----	770	---	723	503	368	275	723	417	777	559	676	662	610	441	121	660	87	755	339	732	778	738	634	671	807	534	718	588	738	517	104	501	458	780	726	591	654
Average------	769	---	413	469	408	403	743	360	704	(466)	613	606	534	580	370	549	184	592	437	697	705	770	699	703	715	602	683	639	750	541	416	506	203	801	594	695	676
May 13-----	745	629	713	616	421	517	599	447	634	120	603	605	---	628	113	506	540	803	417	756	682	731	835	753	782	622	764	703	702	636	536	696	479	797	716	768	571
May 14-----	571	569	246	621	418	625	689	381	786	525	756	635	---	793	236	700	284	689	403	750	655	632	778	750	659	604	753	577	785	562	---	764	709	847	567	780	575
May 15-----	780	480	234	615	353	615	869	549	728	265	708	659	---	784	463	688	648	575	417	748	301	743	644	583	606	638	776	613	368	579	---	750	659	832	615	695	432
May 16-----	791	371	664	623	458	468	1068	589	797	321	469	622	---	776	174	678	613	460	462	746	764	794	711	388	691	567	752	626	501	315	---	662	366	784	608	585	501
May 17-----	783	608	634	611	397	607	670	592	258	585	449	431	---	707	532	---	438	762	414	755	345	741	827	401	464	635	748	701	321	741	661	747	320	---	539	714	549
May 18-----	789	92	606	625	578	570	629	454	554	198	515	545	---	796	665	675	458	316	548	776	481	786	509	162	337	642	734	342	487	264	725	735	452	---	228	513	282
May 19-----	468	390	300	603	86	538	702	620	585	672	766	553	---	779	749	644	545	677	204	767	405	773	875	548	453	631	772	396	---	522	---	706	248	932	451	706	301
Average------	704	448	485	616	387	563	747	519	620	384	609	579	---	752	419	649	504	612	409	757	519	743	740	512	570	620	757	566	527	517	---	723	462	838	532	680	459
May 20-----	830	338	312	549	359	357	624	669	749	548	147	364	---	810	762	638	534	316	303	650	660	810	815	807	607	610	560	731	---	518	628	533	270	914	420	734	767
May 21-----	815	108	762	533	515	449	559	155	715	615	551	457	---	670	777	630	462	358	561	755	787	787	723	656	838	674	665	542	724	386	582	---	437	927	680	771	771
May 22-----	821	669	760	650	556	642	532	317	756	(457)	628	367	---	732	---	640	270	757	461	693	673	---	810	799	535	675	632	716	794	603	766	744	340	942	645	734	768
May 23-----	742	635	242	413	448	619	573	296	673	214	547	542	---	779	430	702	215	675	484	186	741	795	769	740	483	586	645	500	714	48	660	764	677	923	650	778	584
May 24-----	---	180	784	619	505	525	513	445	510	95	---	523	---	818	578	631	649	666	422	489	659	784	753	833	666	651	725	656	606	633	729	695	504	920	664	790	420
May 25-----	---	261	773	630	237	573	594	533	52	126	---	444	---	726	704	381	691	308	195	507	684	794	818	751	569	618	713	368	791	740	701	717	451	887	656	760	721
May 26-----	782	208	564	268	502	336	858	680	703	538	486	482	---	745	663	555	347	784	---	730	752	806	711	673	742	627	603	770	794	686	644	583	529	886	698	669	756
Average------	798	343	600	523	446	500	608	442	594	(370)	472	454	---	754	653	597	453	552	405	573	708	796	771	751	634	634	649	612	737	516	673	673	458	914	630	748	684
May 27-----	659	524	145	654	524	589	615	327	769	704	736	374	---	238	725	427	234	730	595	765	571	(680)	756	404	613	615	655	492	449	496	417	740	408	881	699	323	499
May 28-----	827	294	192	654	687	488	700	292	256	726	777	591	---	701	658	718	459	700	643	738	487	---	729	813	702	579	718	362	786	752	526	679	541	810	704	686	652
May 29-----	---	339	613	472	587	557	607	480	783	702	572	625	---	770	701	468	460	230	741	735	773	690	681	564	486	546	448	761	771	662	652	688	549	730	672	761	678
May 30-----	631	667	634	638	278	510	734	572	767	609	721	558	---	620	550	671	140	751	598	759	755	588	743	337	327	585	449	646	606	476	647	647	548	681	615	554	522
May 31-----	477	559	343	624	477	560	753	612	606	143	712	659	---	695	584	655	480	745	645	743	747	746	772	690	678	596	742	440	758	360	687	695	675	812	686	570	662
June 1-----	772	439	158	621	624	576	868	408	789	290	732	629	---	814	102	538	696	564	748	761	748	736	767	763	692	630	571	703	756	490	725	709	689	841	589	673	652
June 2-----	799	658	736	591	732	441	701	715	806	564	764	---	---	726	211	175	396	735	759	764	702	761	829	810	730	633	586	741	776	559	598	611	479	904	---	769	765
Average------	694	497	403	608	558	532	711	487	682	534	716	573	---	652	504	522	409	636	675	752	683	(700)	754	626	604	598	596	592	700	542	608	681	556	808	661	619	633

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

* Data doubtful; defective pyrheliometer.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

	Las Vegas, Nev.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.	Matanuska, Alaska	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City, Okla.
1960																		
May 6-----	767	428	469	685	721	46	247	478	849	462	672	686	227	675	746	313	285	---
May 7-----	760	106	779	695	729	173	656	199	859	---	525	724	275	633	596	688	79	---
May 8-----	746	323	786	697	711	216	641	188	841	655	429	693	518	239	113	681	411	---
May 9-----	740	172	392	692	717	132	628	197	733	570	738	699	639	223	199	705	651	---
May 10-----	746	117	---	685	715	185	679	500	620	685	720	667	373	622	373	701	290	---
May 11-----	750	229	---	717	717	802	620	301	380	679	679	429	133	184	253	744	123	---
May 12-----	763	205	---	701	725	804	680	278	479	442	612	717	331	418	477	730	156	754
Average------	753	226	606	696	719	337	593	306	680	582	625	659	357	428	394	652	285	---
May 13-----	722	443	---	704	709	772	614	---	419	638	680	693	---	224	264	---	553	718
May 14-----	756	769	---	272	252	732	579	507	352	658	708	523	713	435	432	---	581	775
May 15-----	746	784	---	648	347	741	207	276	325	367	721	410	561	400	572	355	682	119
May 16-----	610	518	---	655	454	(205)	501	198	433	701	714	725	519	346	665	223	543	653
May 17-----	754	726	---	656	653	374	672	610	595	450	721	389	650	615	501	684	620	492
May 18-----	743	674	---	685	669	710	465	229	827	637	691	706	512	131	66	---	598	---
May 19-----	807	478	---	712	731	121	338	532	754	650	700	736	327	665	678	389	405	---
Average------	734	628	---	619	545	(522)	482	392	529	586	705	597	547	402	454	412	569	551
May 20-----	797	---	---	718	745	244	128	684	824	273	691	765	556	---	301	92	589	---
May 21-----	811	820	---	692	714	372	721	537	810	464	451	738	785	595	408	618	575	747
May 22-----	798	781	---	713	747	771	695	328	807	337	543	608	771	460	131	757	732	693
May 23-----	817	762	---	736	756	802	572	629	---	256	474	725	633	195	104	548	673	568
May 24-----	804	514	---	722	765	720	609	616	---	619	535	679	656	394	483	353	603	455
May 25-----	777	634	---	701	727	519	516	---	754	196	586	745	688	255	620	415	613	702
May 26-----	768	666	---	698	721	304	708	195	840	337	607	758	376	542	627	726	638	719
Average------	796	696	---	711	739	533	564	498	807	354	555	717	638	407	382	501	632	647
May 27-----	740	236	---	725	742	315	708	695	788	739	268	688	552	708	714	772	546	662
May 28-----	752	225	---	698	750	176	259	391	663	634	410	519	632	698	587	652	506	650
May 29-----	702	792	---	445	471	184	684	226	736	732	275	346	662	681	463	629	564	726
May 30-----	701	600	---	397	410	545	703	301	841	724	114	183	701	559	455	751	666	192
May 31-----	735	770	---	325	473	629	662	424	801	732	250	654	696	244	512	715	673	667
June 1-----	765	686	---	370	582	481	485	386	525	735	389	708	671	457	447	668	710	---
June 2-----	762	539	---	497	590	814	680	418	447	736	414	713	326	691	591	727	398	671
Average------	737	550	---	494	574	449	597	406	686	719	303	544	606	577	538	702	581	595

	Page, Ariz.	Portland, Me.	Pullman, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	Salt Lake City, Utah	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Seattle-Tacoma, Wash.	Shreveport, La.	Spokane, Wash.	State College, Pa.	Tampa, Fla.	Tucson, Ariz.	Washington, D. C. (Obs & Test Dev Ctr)
1960																		
May 6-----	764	677	453	605	751	608	758	685	744	69	693	119	604	430	696	533	(755)	687
May 7-----	755	666	248	749	759	705	512	747	709	79	630	486	713	324	470	437	762	498
May 8-----	757	142	738	644	739	768	667	711	737	149	232	656	726	735	160	717	761	105
May 9-----	753	243	621	649	724	422	751	642	708	107	243	652	564	673	146	708	(759)	409
May 10-----	736	573	721	738	714	460	739	614	739	---	---	286	695	726	80	698	747	609
May 11-----	752	87	592	730	751	775	712	482	726	714	451	266	649	747	293	606	750	409
May 12-----	724	495	233	695	760	758	626	750	691	766	423	432	750	271	96	427	752	166
Average------	749	412	515	687	743	643	681	662	722	314	445	414	671	558	277	589	(755)	412
May 13-----	621	568	516	612	714	669	770	689	---	562	247	602	722	565	216	624	747	441
May 14-----	633	336	687	750	225	663	718	534	740	483	593	604	208	588	244	670	600	452
May 15-----	718	163	740	678	328	762	751	583	646	539	565	508	360	734	615	697	798	652
May 16-----	655	369	329	723	586	200	678	642	689	600	658	539	461	326	741	695	(801)	667
May 17-----	674	695	678	467	652	725	614	226	724	238	440	297	534	527	368	700	(748)	440
May 18-----	607	239	452	269	644	181	249	260	726	745	111	578	441	410	235	681	784	503
May 19-----	778	743	736	(355)	805	504	816	392	731	326	668	210	556	639	669	681	747	595
Average------	669	445	591	(551)	565	529	657	475	709	499	469	477	469	541	441	678	(746)	536
May 20-----	769	713	130	(790)	792	99	779	462	728	---	---	476	196	116	333	588	790	615
May 21-----	736	764	590	(677)	785	214	766	707	732	105	412	526	771	483	296	558	793	362
May 22-----	722	489	613	(780)	802	625	674	641	772	160	342	---	572	575	418	635	797	151
May 23-----	713	346	503	580	819	751	732	535	763	---	108	559	659	577	313	647	793	298
May 24-----	785	411	520	408	778	581	793	367	758	666	340	302	653	596	666	665	804	646
May 25-----	757	---	549	394	788	588	790	115	751	397	497	297	565	586	700	635	834	349
May 26-----	740	748	358	786	759	(209)	626	546	736	702	504	490	708	345	609	672	807	484
Average------	746	578	466	(631)	789	(438)	737	482	749	406	367	442	589	468	477	629	802	415
May 27-----	576	764	615	(518)	761	297	425	637	756	710	712	598	717	466	459	539	671	338
May 28-----	746	761	750	731	756	194	796	536	725	505	624	680	689	744	117	553	769	98
May 29-----	713	763	700	(797)	512	265	761	393	442	654	620	541	600	662	122	255	788	137
May 30-----	556	772	528	626	516	769	760	573	619	174	348	340	661	522	93	388	760	185
May 31-----	721	76	728	664	573	657	718	673	632	798	581	590	539	716	304	592	757	672
June 1-----	725	254	748	687	632	682	740	611	612	666	558	721	616	650	785	587	759	709
June 2-----	596	465	789	774	726	748	781	613	754	592	672	724	725	779	724	586	550	599
Average------	662	551	694	(685)	639	516	712	577	649	586	588	599	649	648	372	500	722	391

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

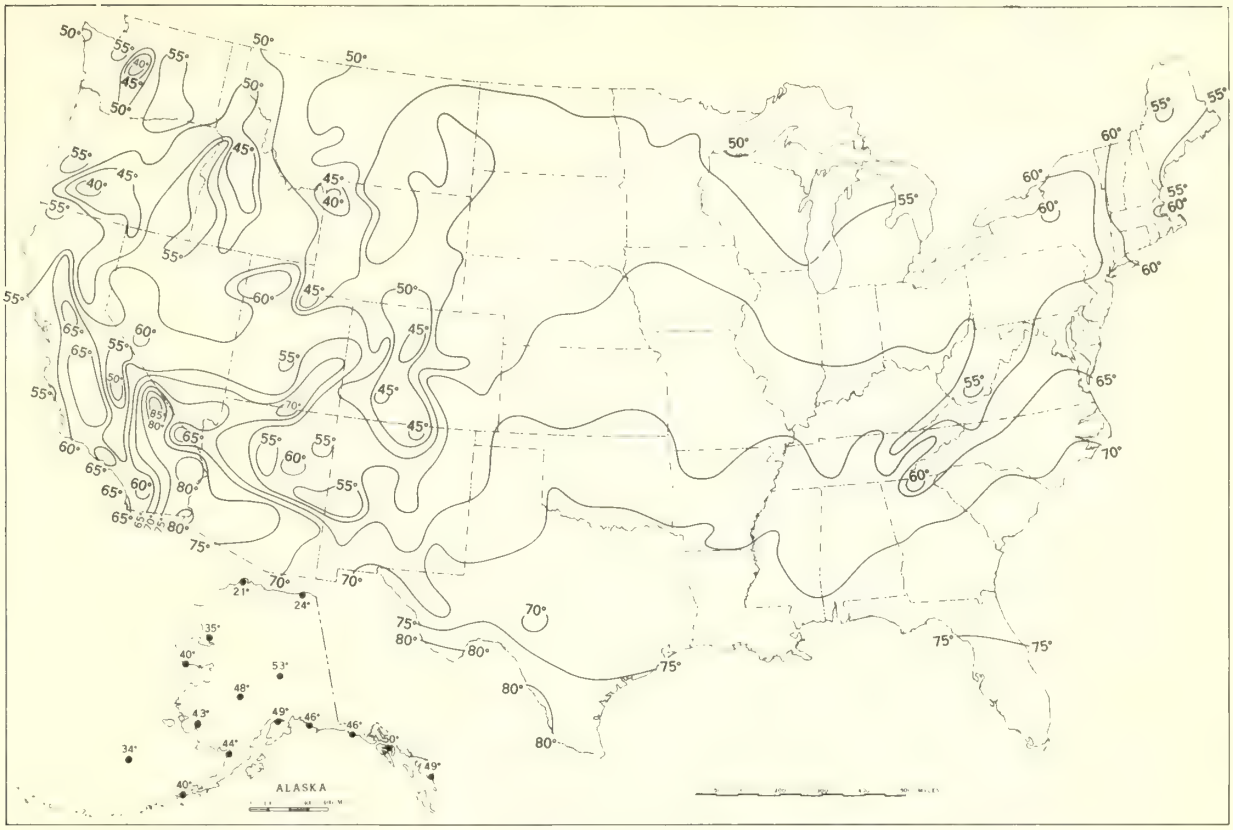
MAY 1960

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bismarck, N. Dak.	407	412	---	---	356	384	359	---	426	390	357	353	338	375	346	334	---	345	367	406	320	314	310	335	---	365	271	---	271	317	349
Caribou, Maine	373	---	394	374	359	348	---	334	---	---	---	---	---	---	---	---	---	337	353	351	364	341	---	---	362	367	334	363	364	361	374
Fort Worth, Texas	340	339	346	---	---	291	284	315	360	399	398	---	336	317	300	317	---	---	---	343	334	---	---	330	298	371	350	330	349	---	320
Green Bay, Wis.	413	377	---	314	---	---	---	---	---	---	355	---	---	---	---	---	---	310	---	---	---	337	234	295	310	---	---	---	---	362	333
Silver Hill, Md.	360	423	393	399	370	357	334	---	391	393	403*	441*	443	429	379	372	372	349	373	364	371	398*	398	369	374	385	375*	---	447*	395*	385

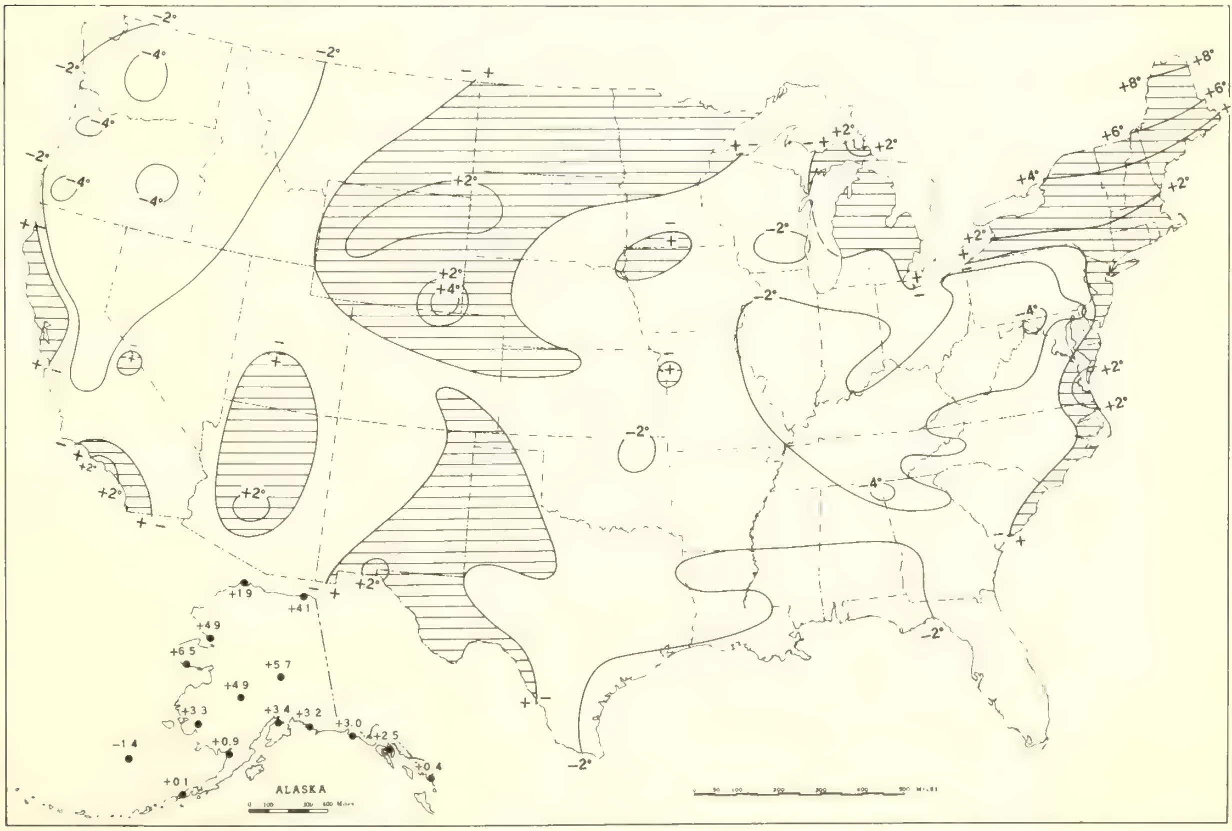
The spectrophotometer measures the total amount of ozone in the atmosphere, i.e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to a standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observations can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations; therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational precedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer," Annals of the International Geophysical Year, Volume V, Pergamon Press, 1957.

Chart I. A. Average Temperature (°F.) at Surface, May 1960.



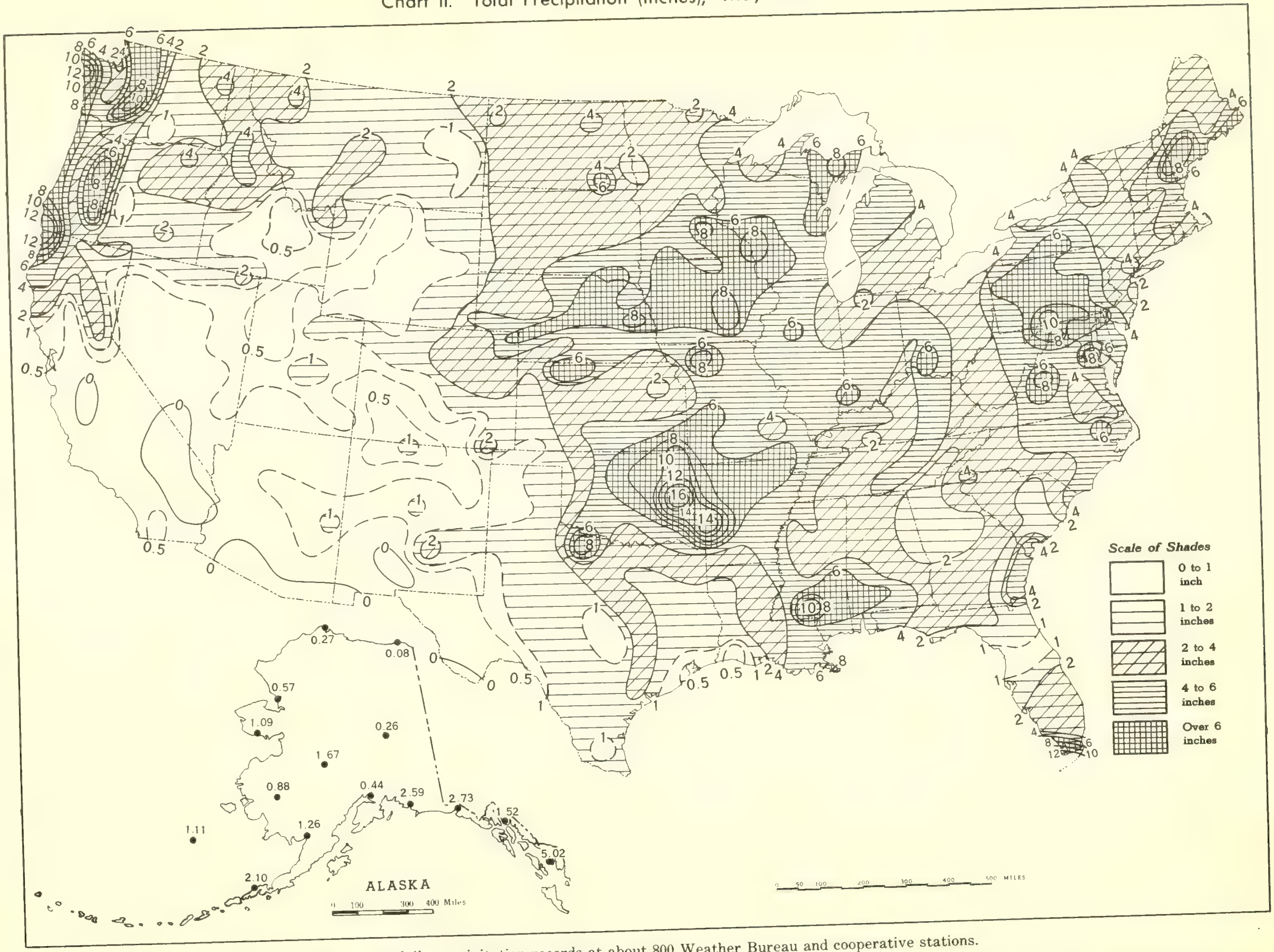
B. Departure of Average Temperature from Normal (°F.), May 1960.



A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

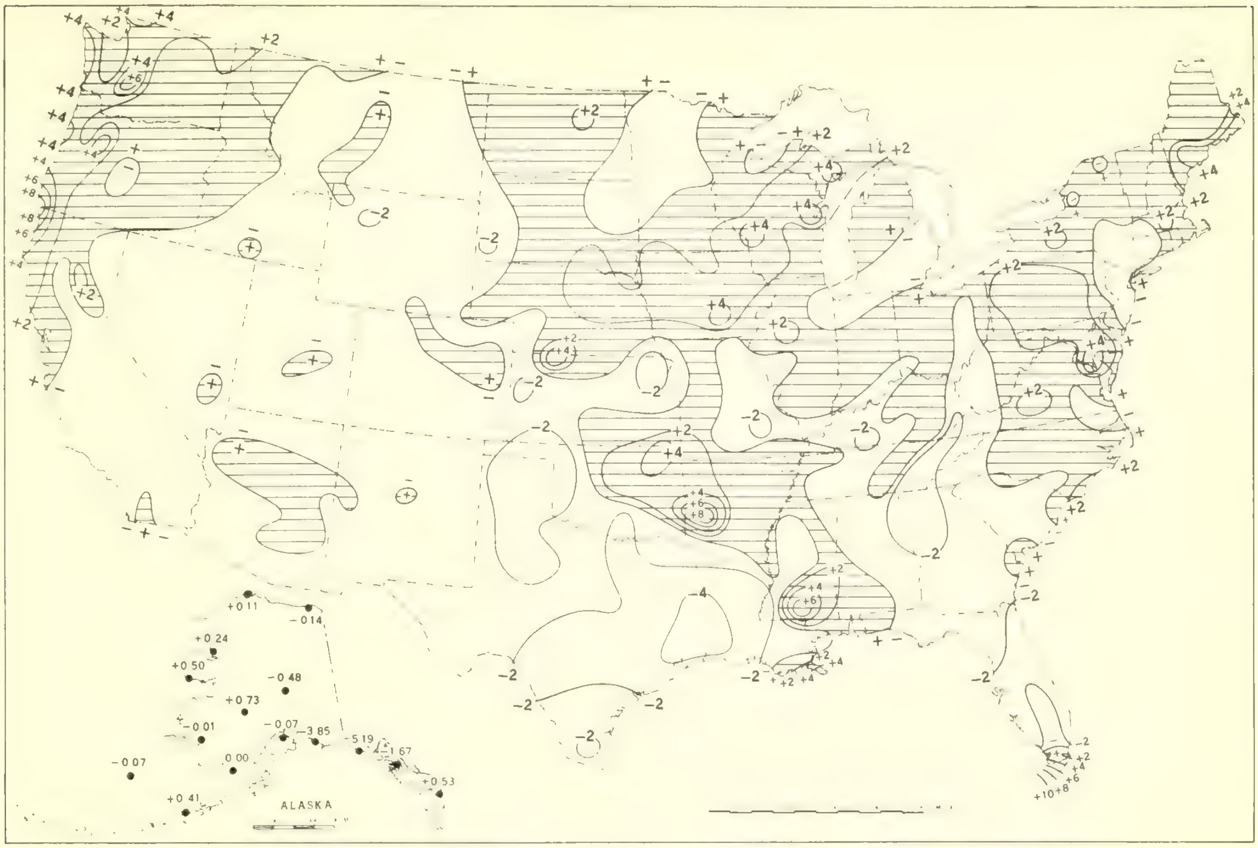
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), May 1960.

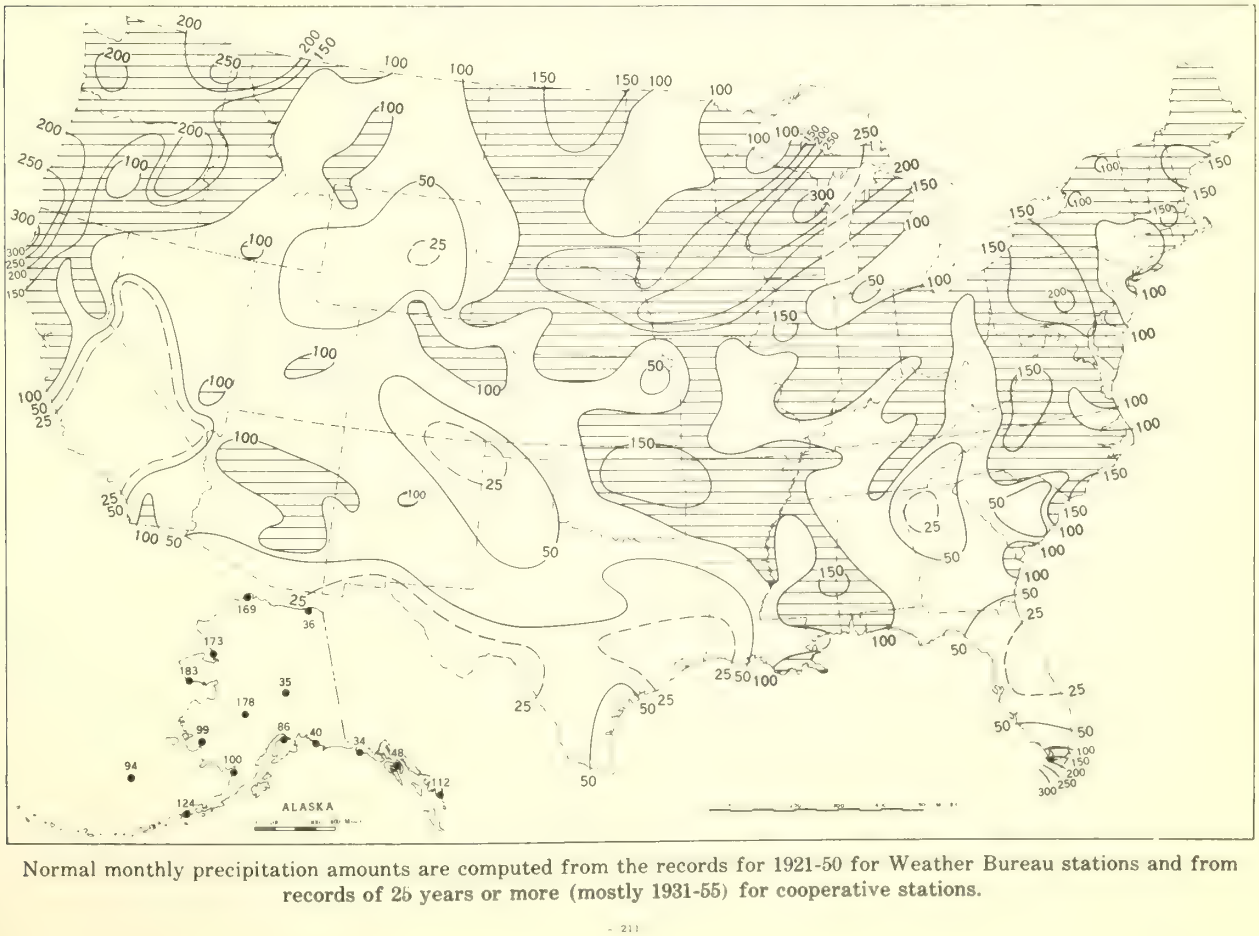


Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), May 1960.

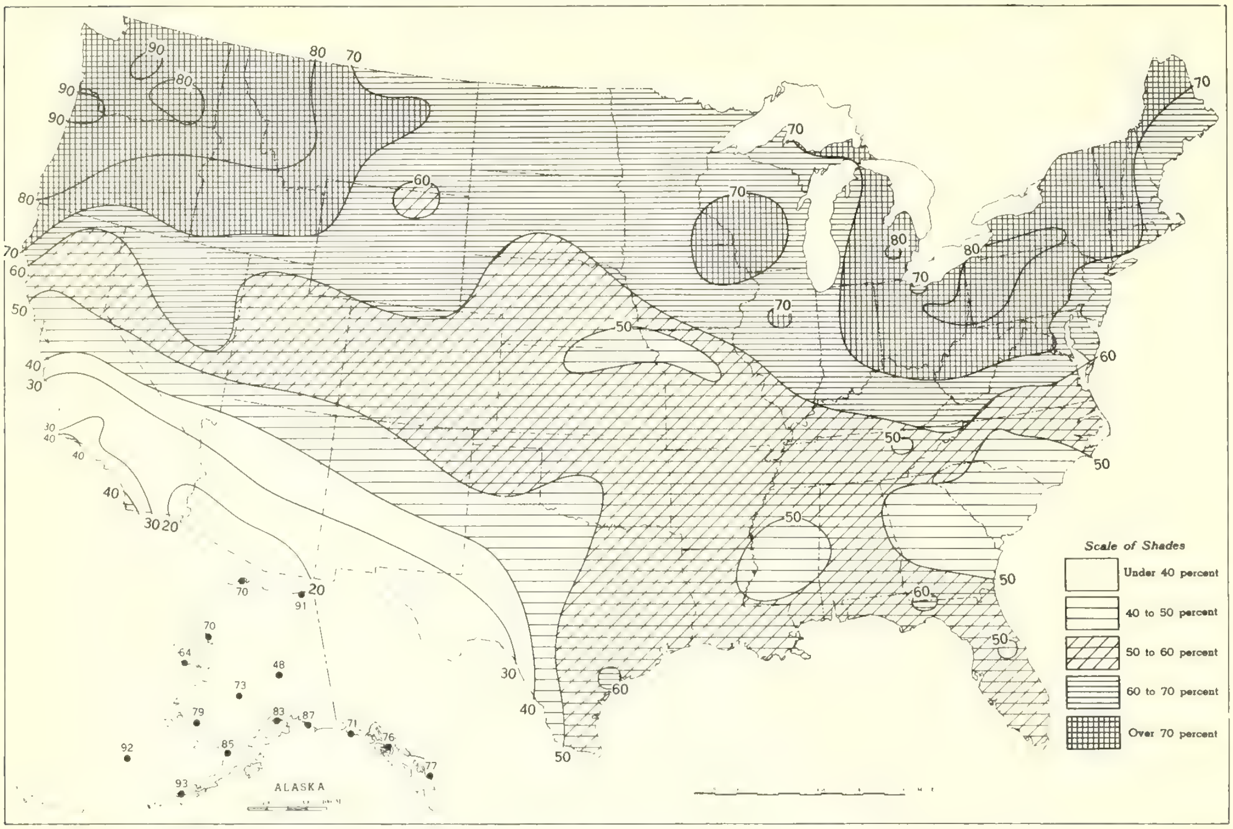


B. Percentage of Normal Precipitation, May 1960.

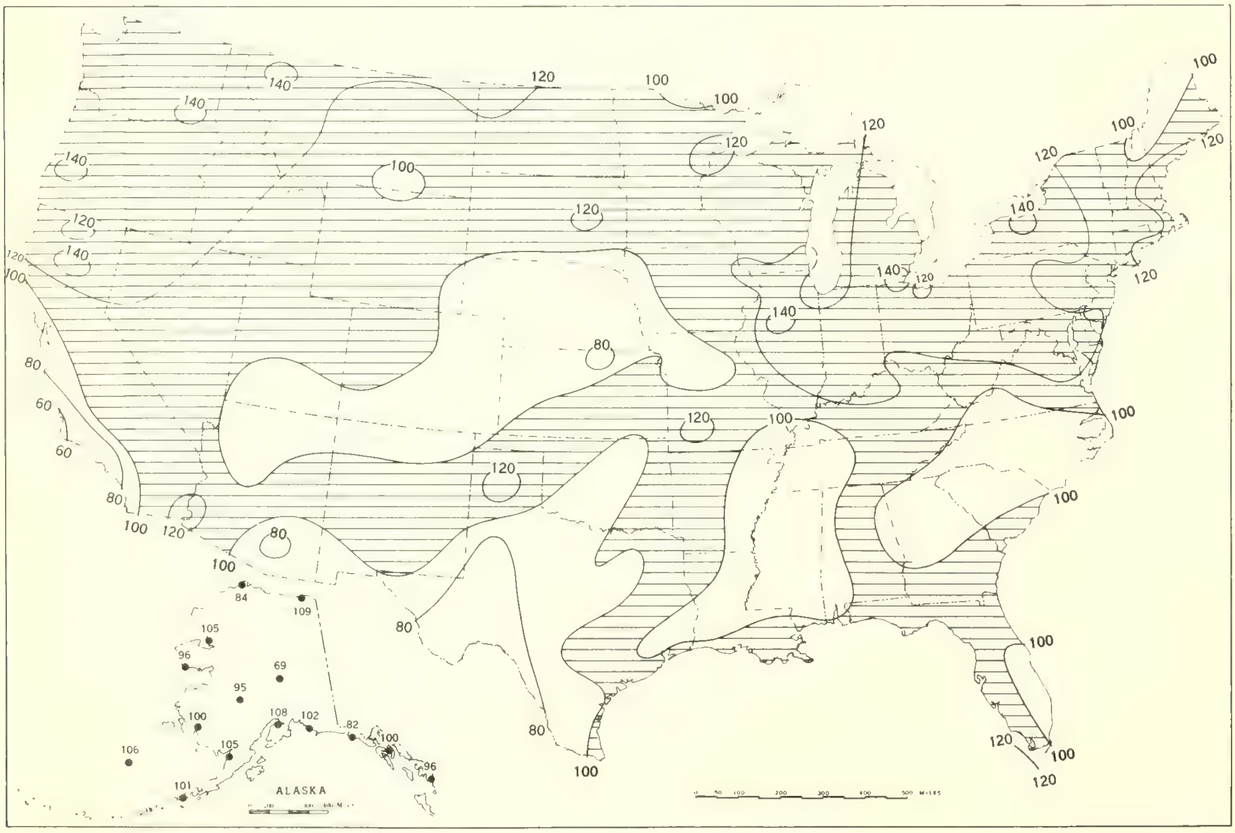


Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, May 1960.

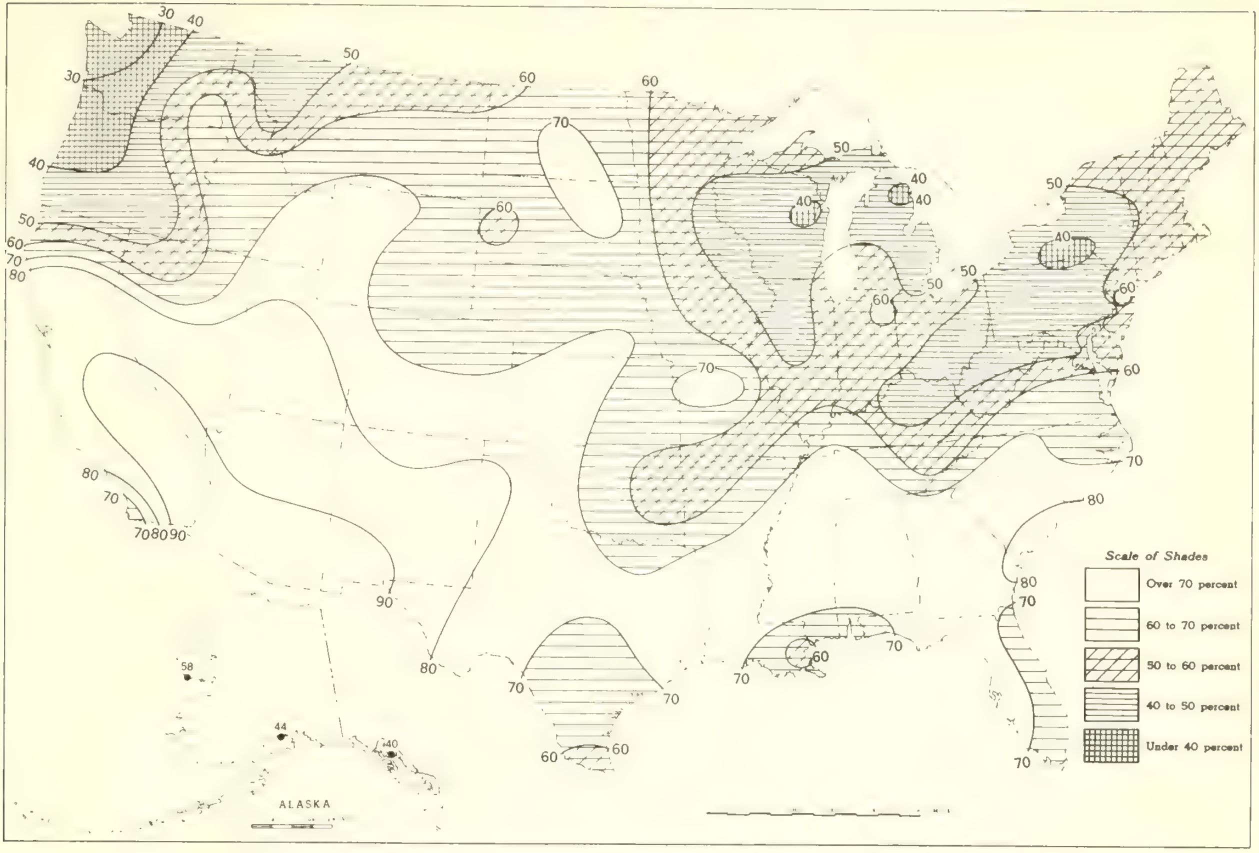


B. Percentage of Mean Monthly Sky Cover Between Sunrise and Sunset, May 1960.

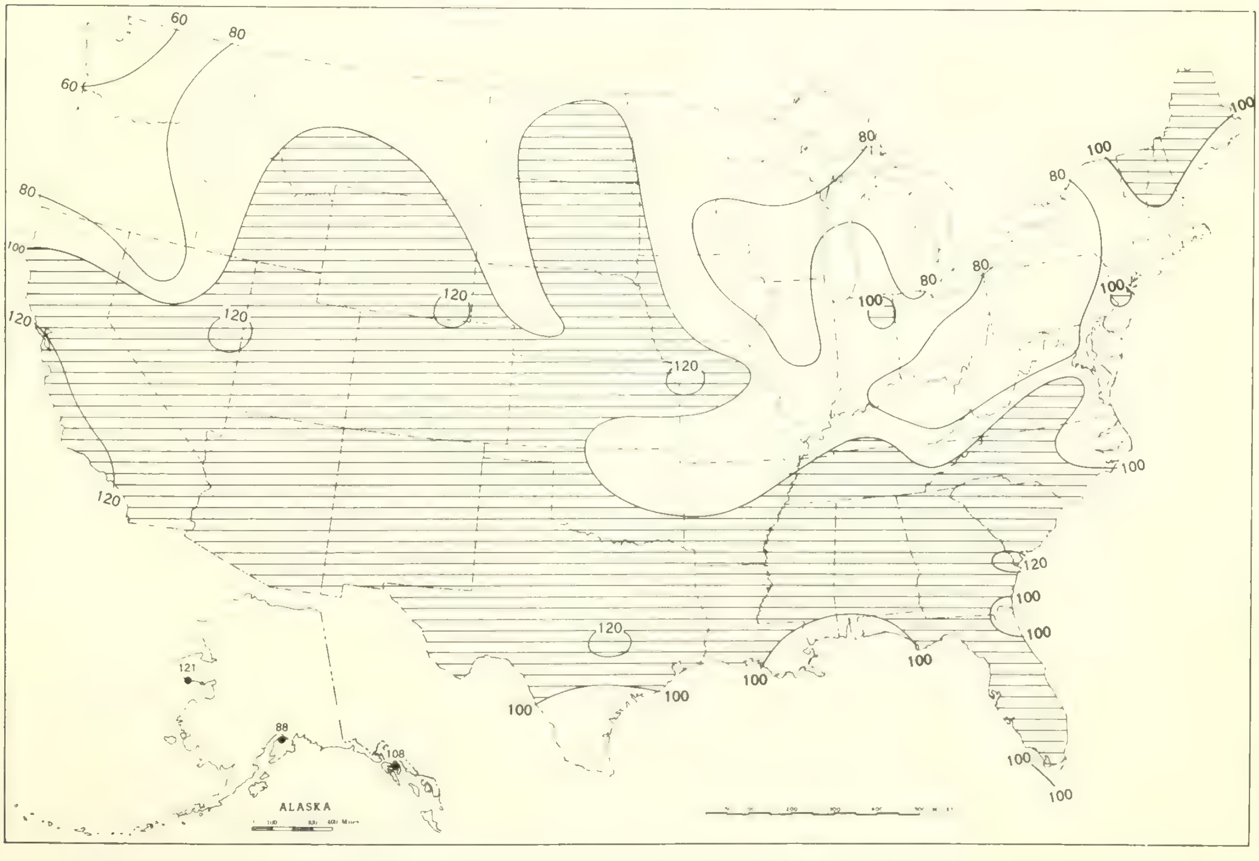


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of mean amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, May 1960.

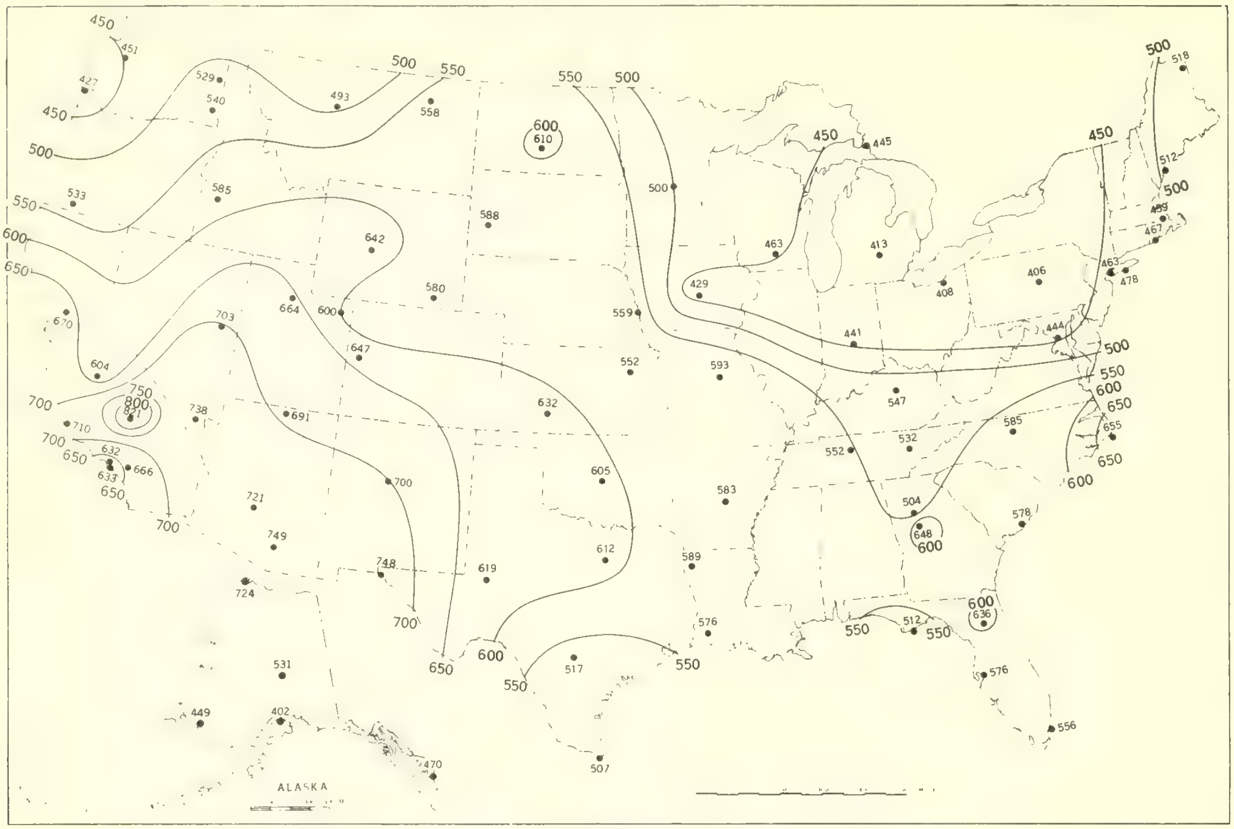


B. Percentage of Mean Monthly Sunshine, May 1960.

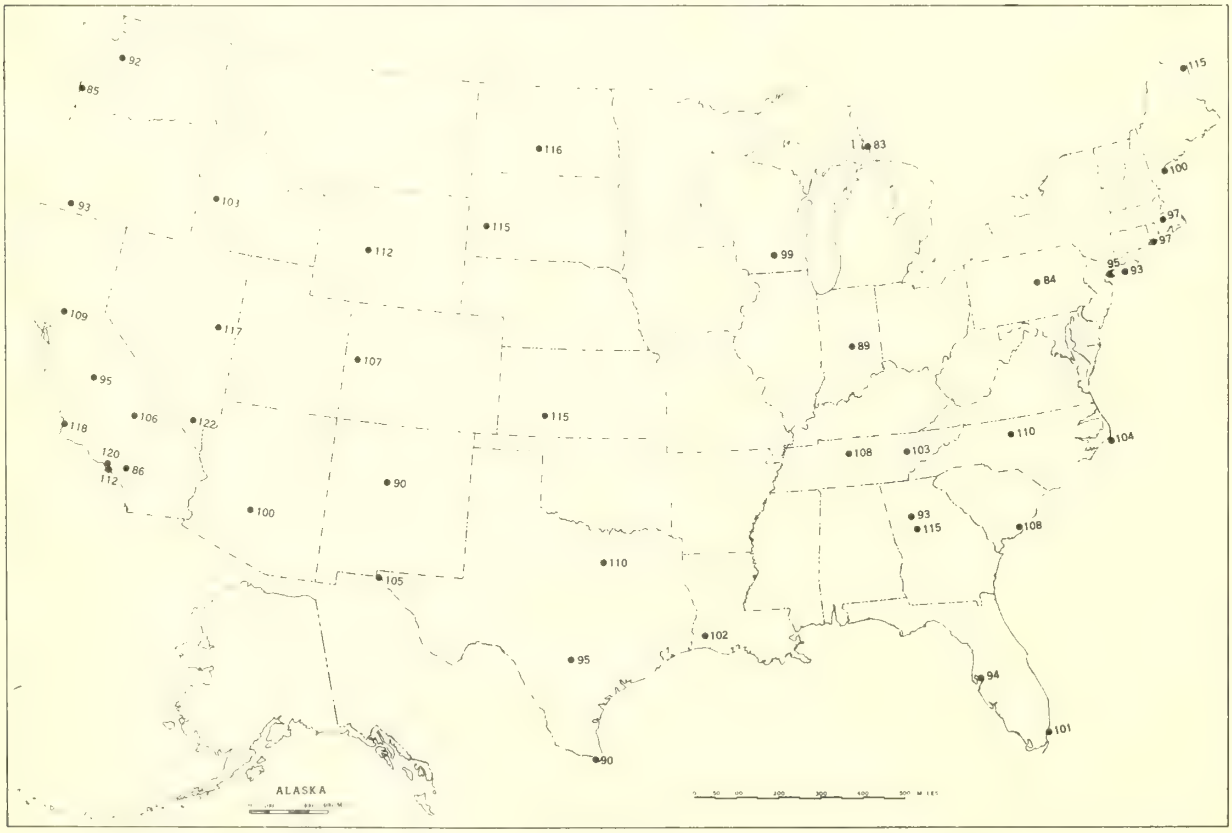


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, May 1960.



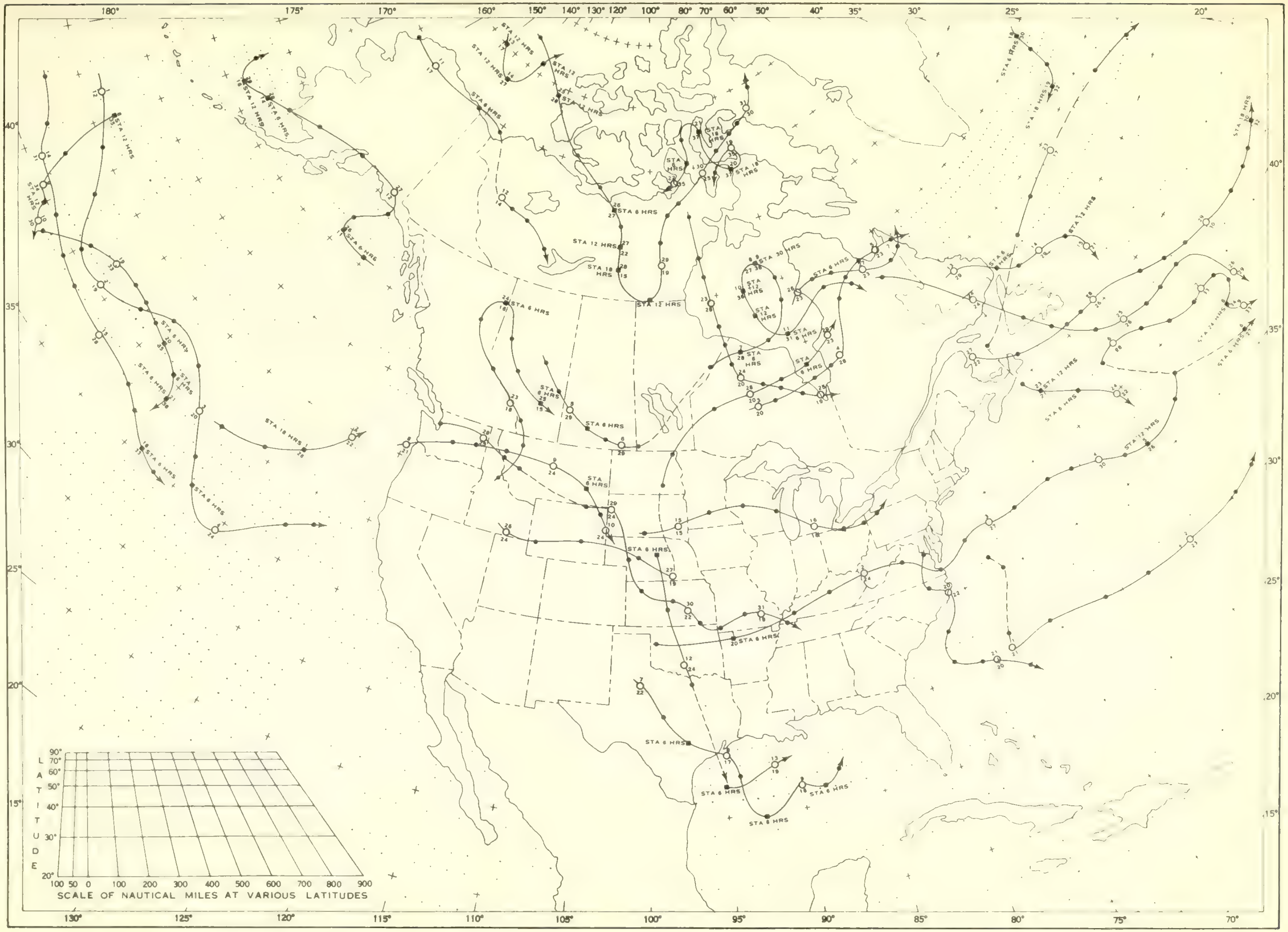
B. Percentage of Mean Daily Solar Radiation, May 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

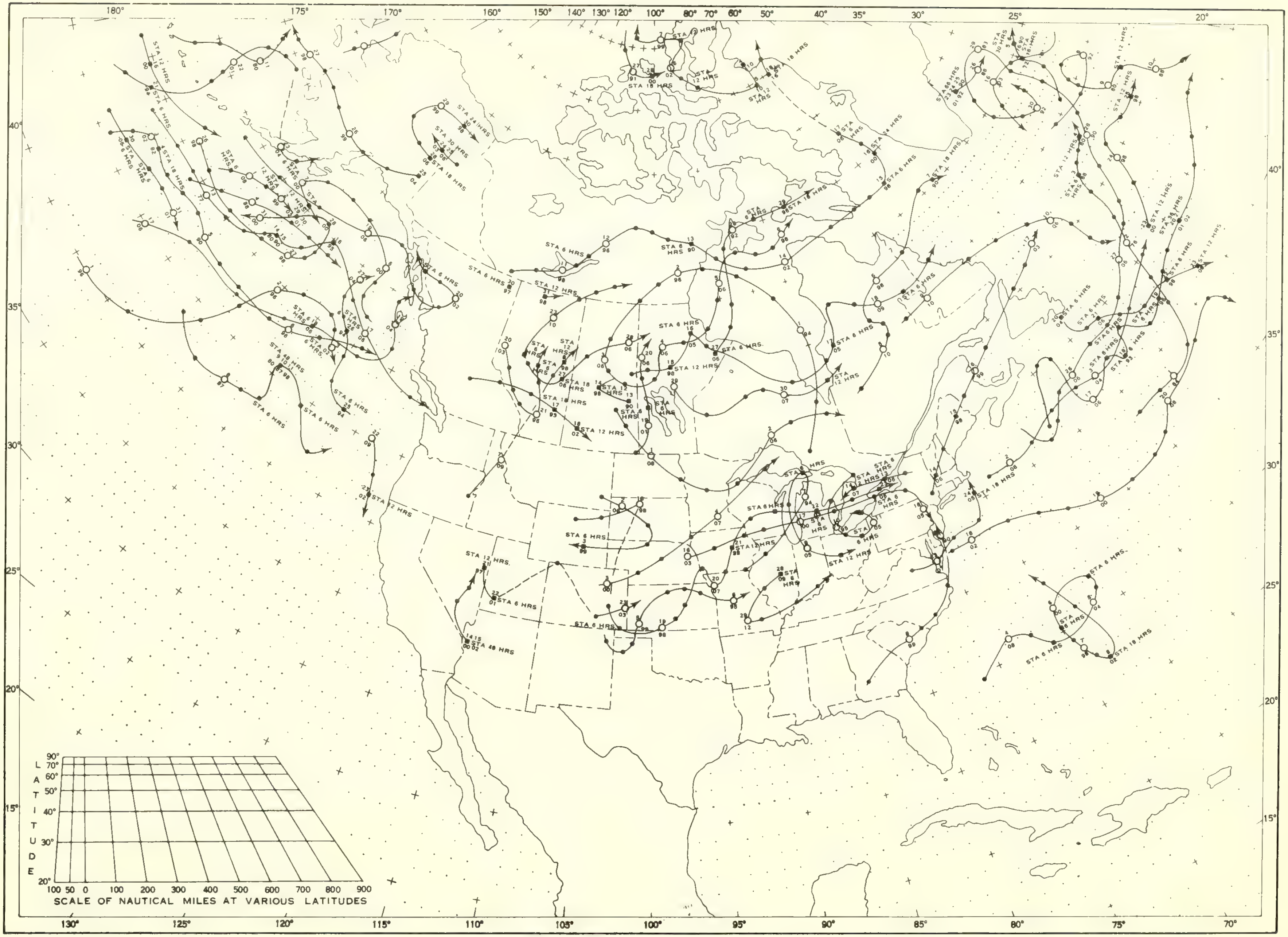
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, May 1960.



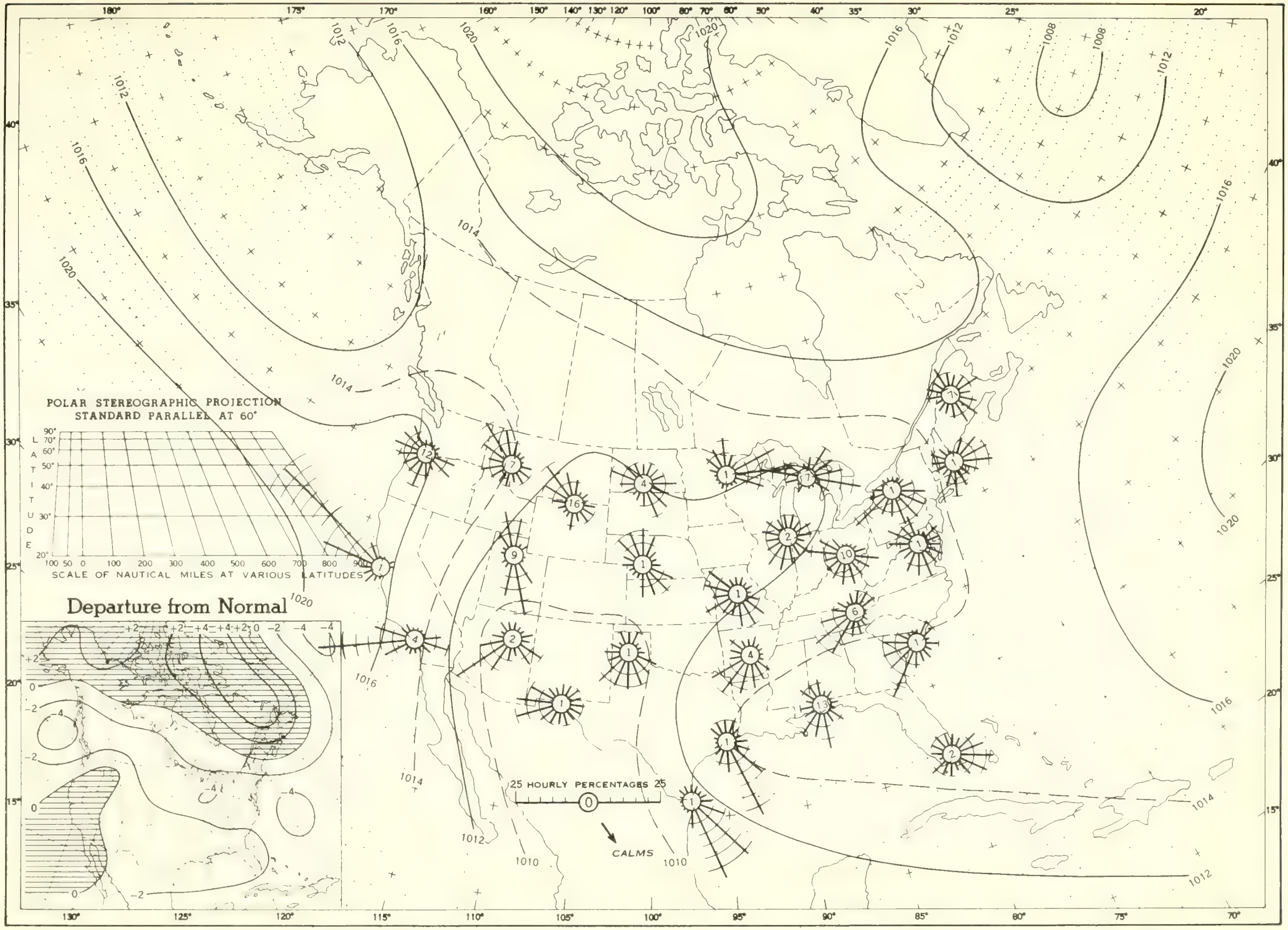
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, May 1960.



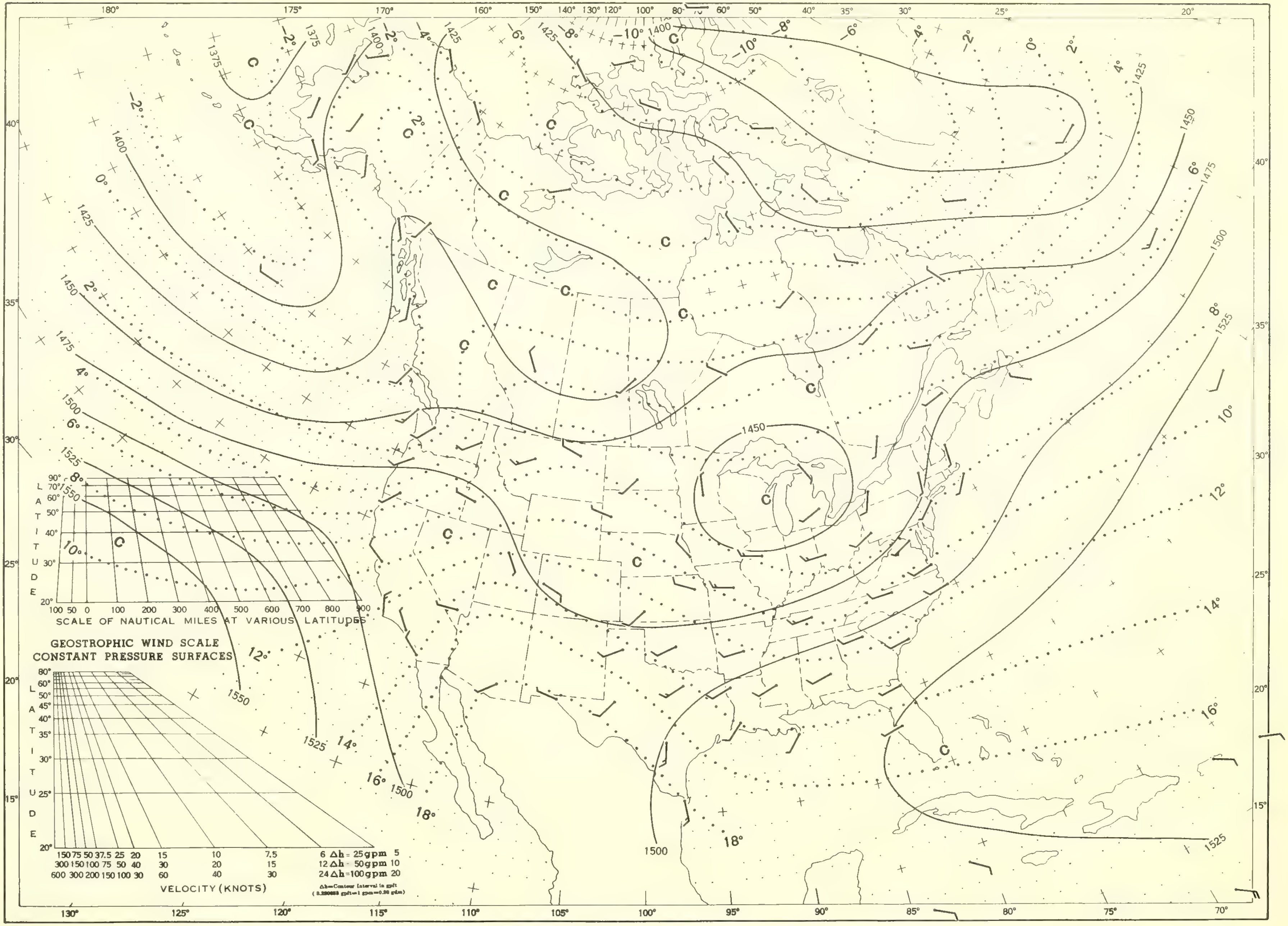
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, May 1960. Inset: Departure of Average Pressure (mb.) from Normal, May 1960.



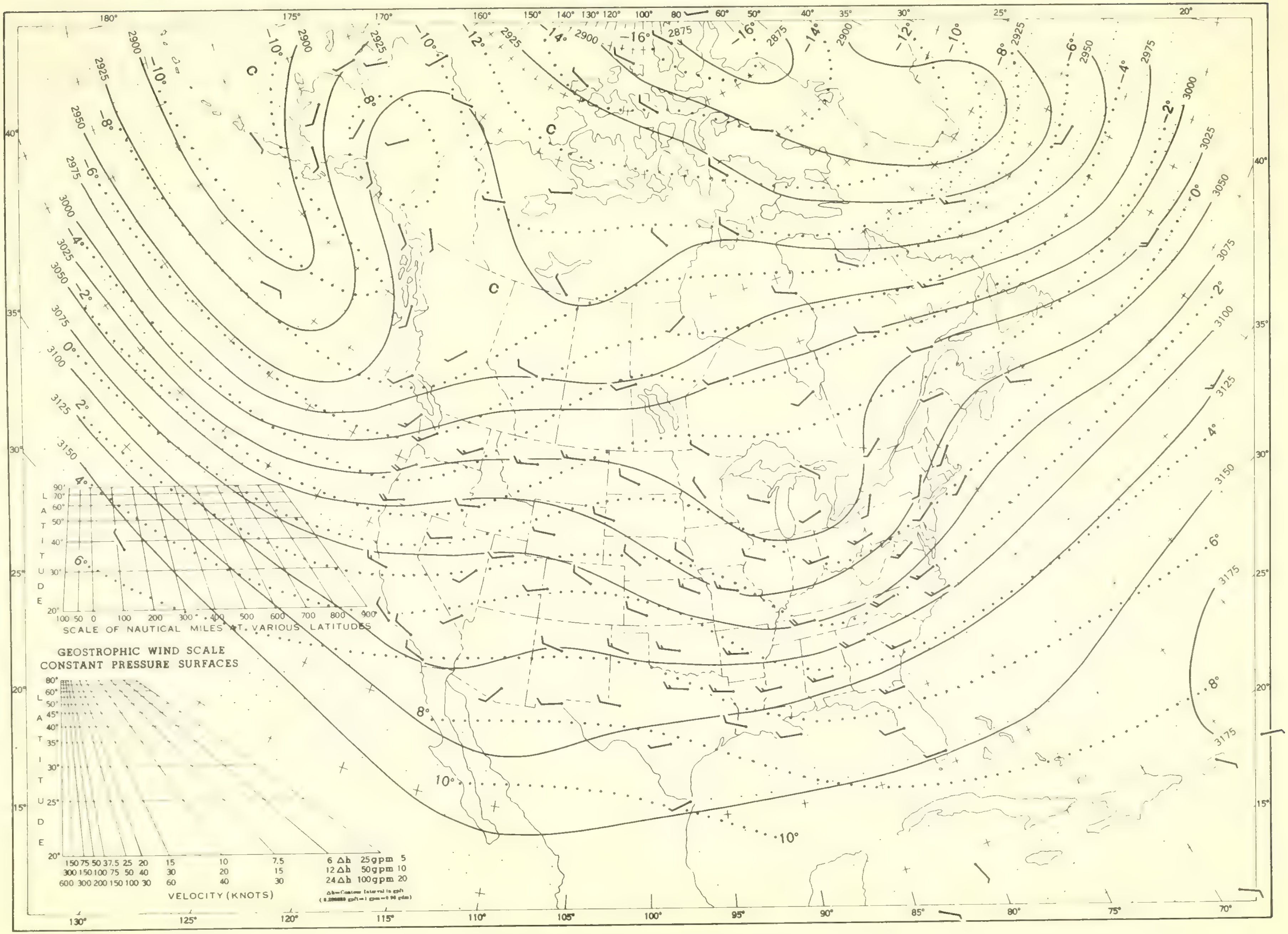
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, May 1960. Average Height and Temperature, and Resultant Winds.



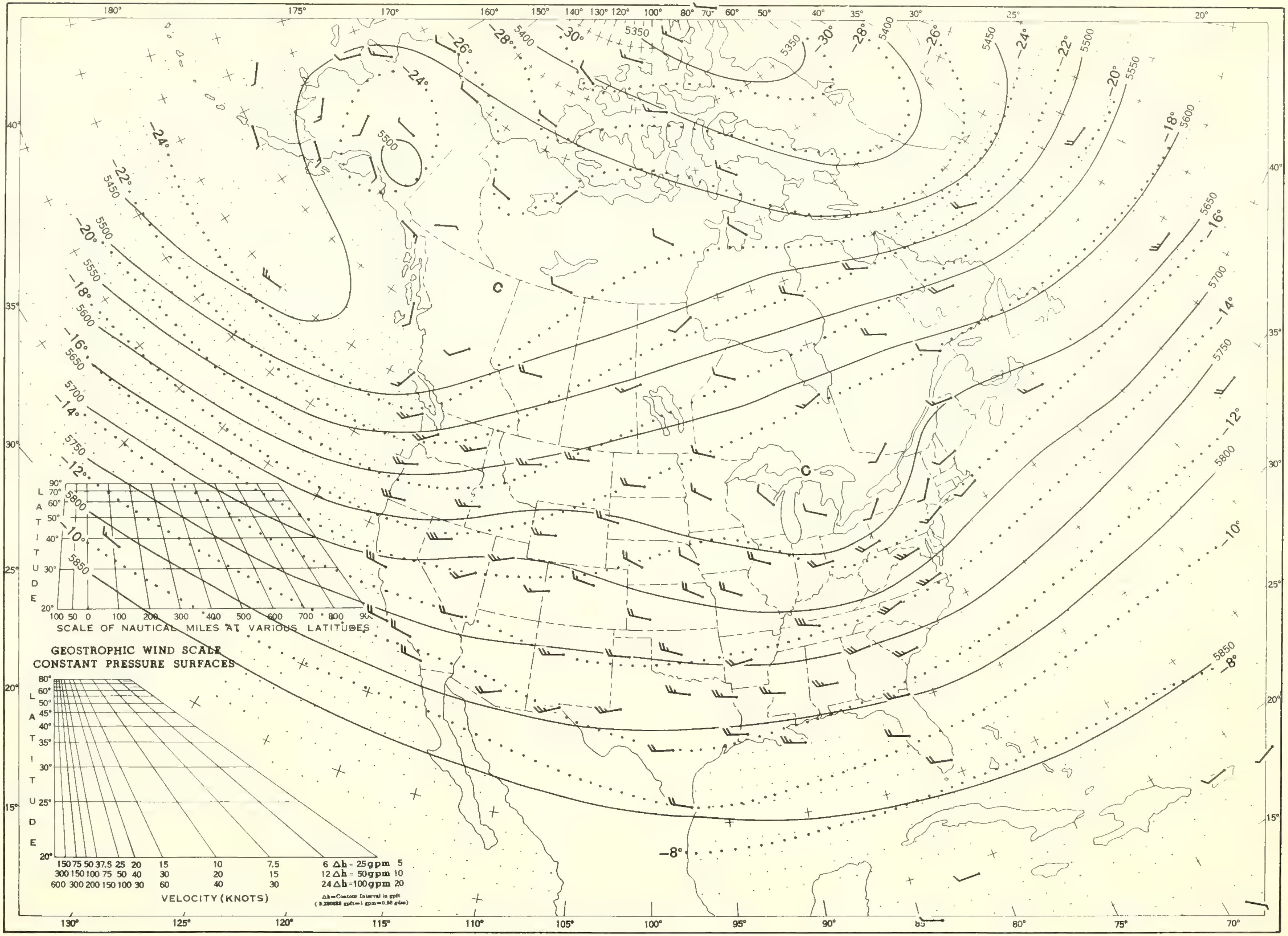
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, May 1960. Average Height and Temperature, and Resultant Winds.



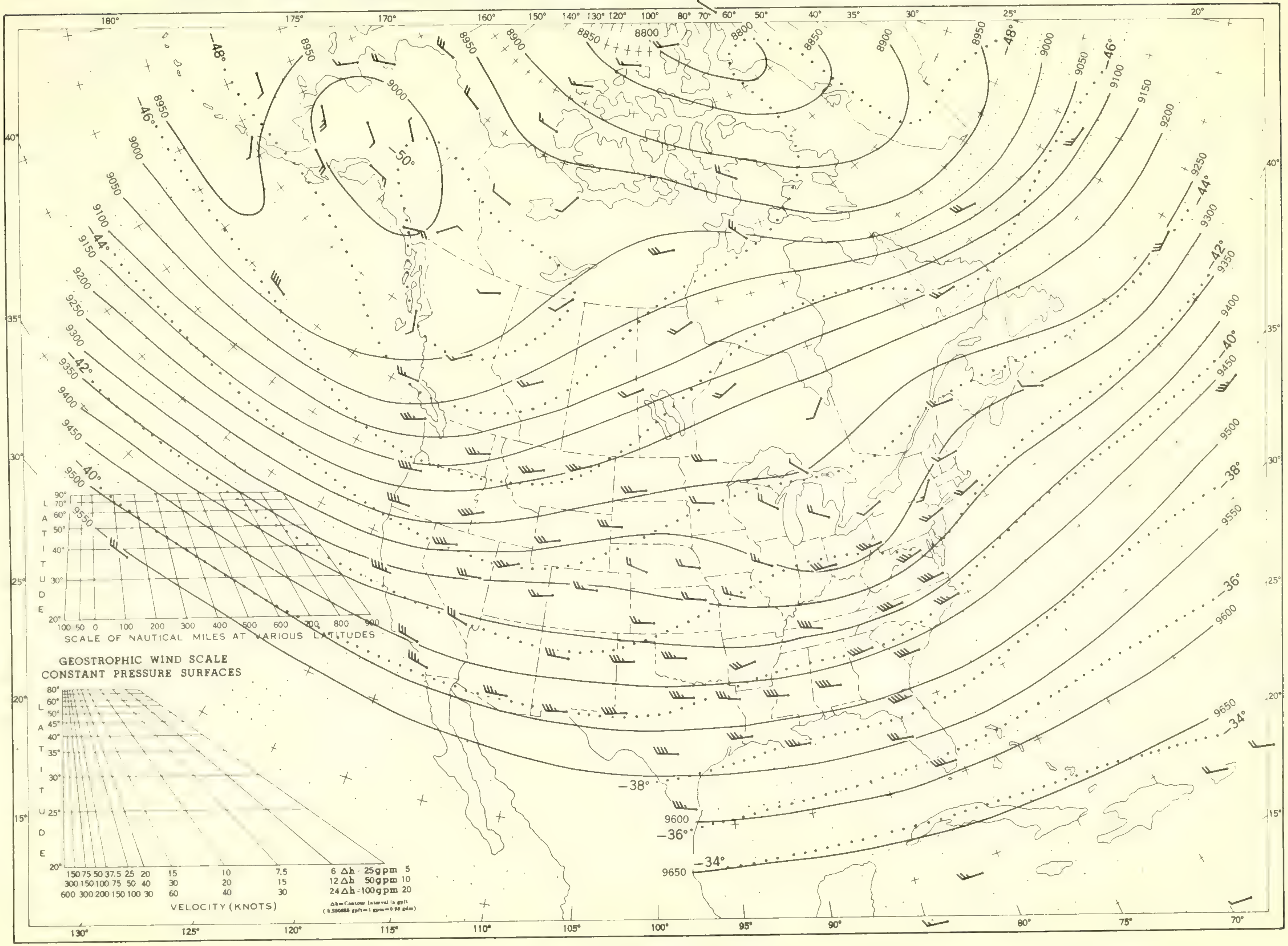
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, May 1960. Average Height and Temperature, and Resultant Winds.



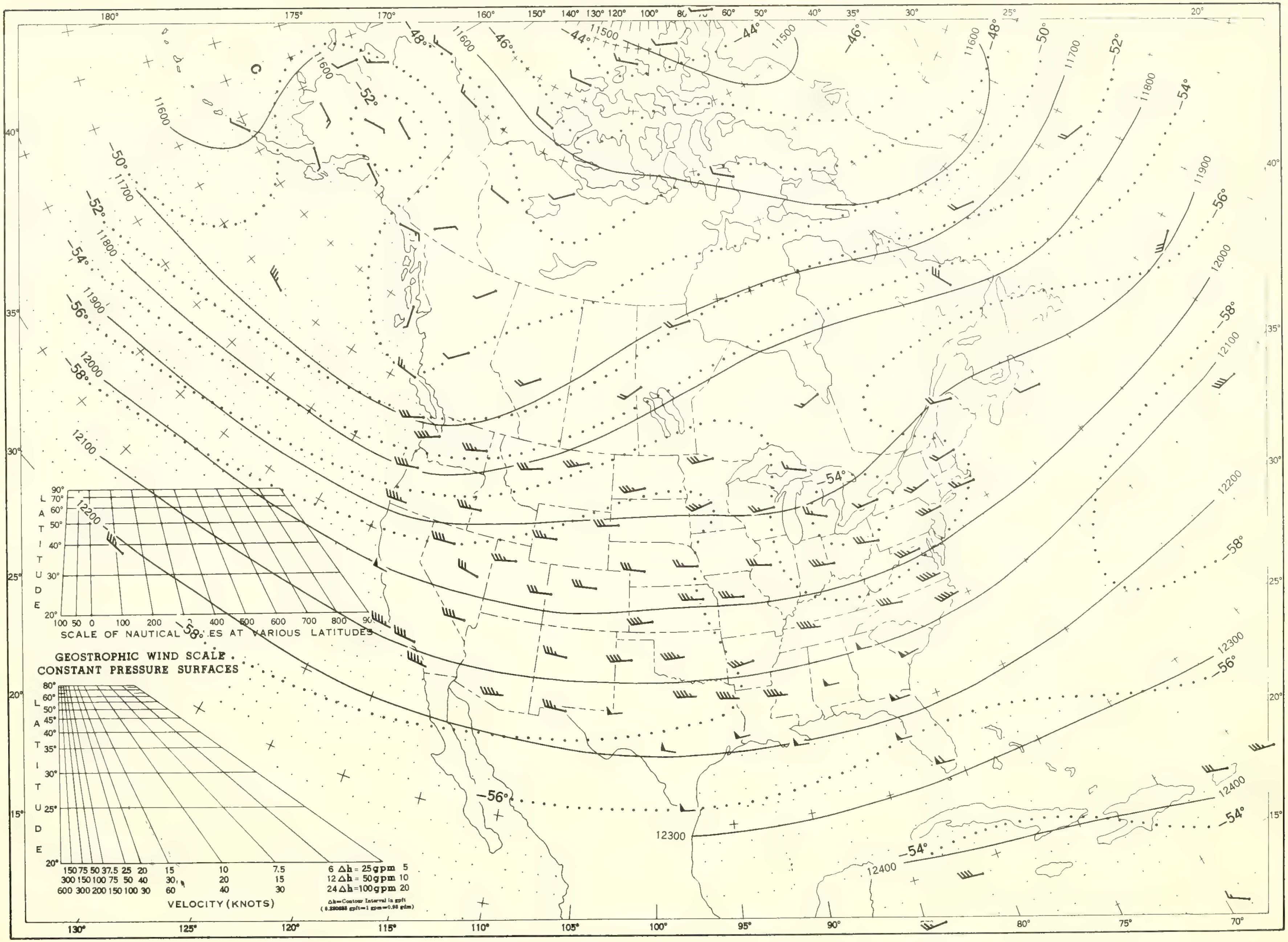
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, May 1960. Average Height and Temperature, and Resultant Winds.



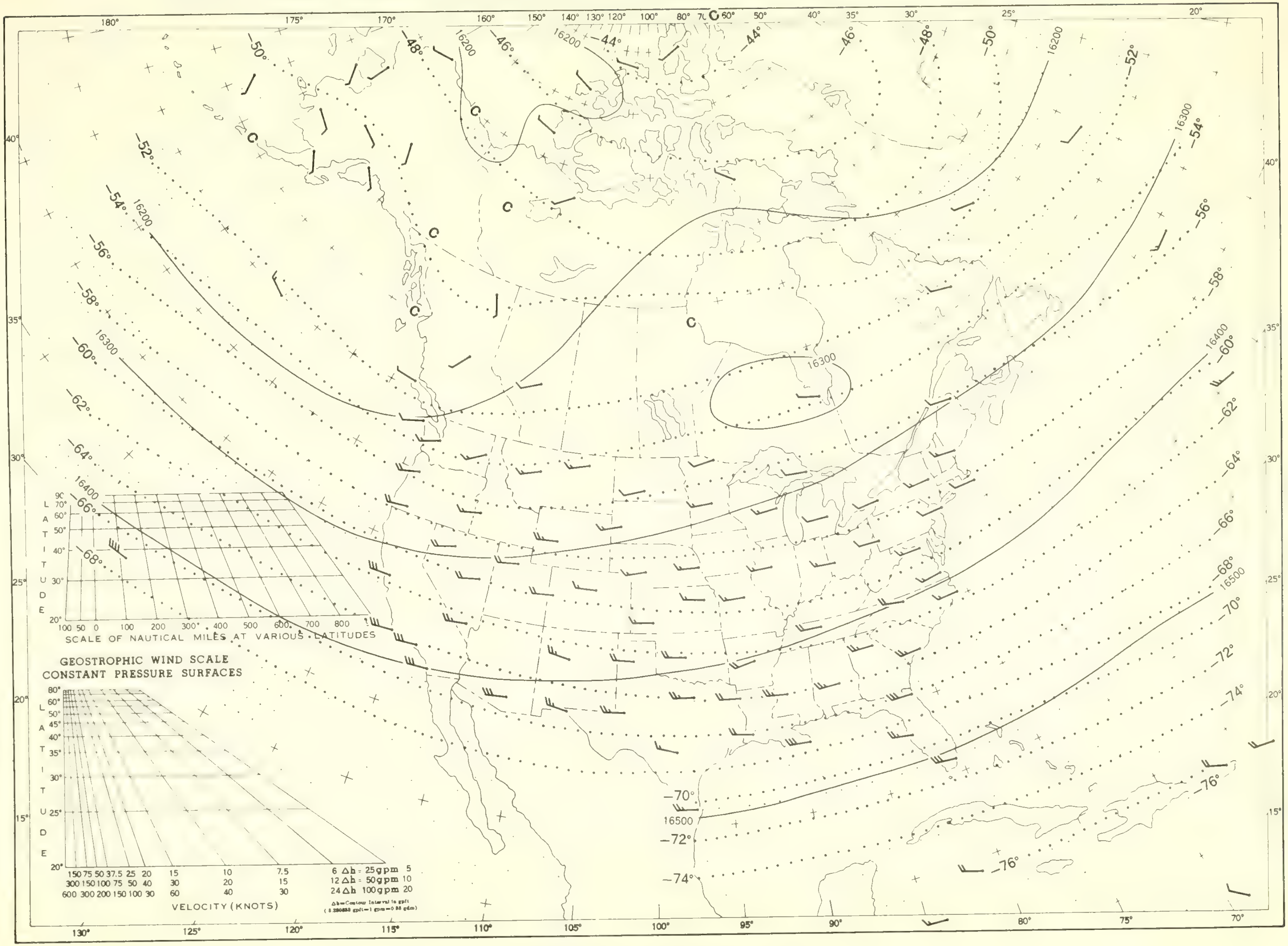
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, May 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, May 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

USCOMM-WB-Asheville - 7/21/60 - 1900

U. S. DEPARTMENT OF COMMERCE
FREDERICK H. MUELLER, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

SEP 1
AGRI.

JUNE 1960
Volume 11 No. 6

ASHEVILLE: 1960

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 6 JUNE 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

June was highlighted by extreme heat and drought in most areas west of the Rocky Mountains; cool weather in the central and northern Great Plains, upper and middle Mississippi Valley, the Great Lakes region, and Ohio Valley States; near seasonal temperatures along the Atlantic coast, with slightly below normal in southern sections and slightly above normal in the north; heavy to excessive precipitation from southeast Texas to the central Mississippi and Ohio Valleys; and in scattered areas of the Texas Panhandle, Florida, the Carolinas, and the Northeastern States; and markedly deficient precipitation in the Ozarks, portions of the Gulf States, and along a band from north-central North Carolina to coastal sections of New England, with monthly totals averaging from 25 to 50 percent of normal.

The usual local storm damage occurred in scattered sections of the Great Plains, Middle West, Northeast, and Southeast.

TEMPERATURE. -- Temperatures for June averaged much above normal over most of California, the Desert Southwest, the Plateau States, and the southern Rocky Mountains, with clear, sunny weather the dominant feature of the month in the western half of the Nation. With the exception of coastal sections of Oregon and the northwestern half of Washington, above-normal temperatures extended from the Pacific coast to the western High Plains, throughout Texas, and over most of Mississippi and Alabama. The only other significant above-normal temperature area included the north Atlantic coastal region from Maryland to New England.

As in most of the preceding months this year, below-normal temperatures were the general pattern in the northern Great Plains and the Great Lakes region, extending southward this month to Arkansas and the South Atlantic States. Temperature departures were +6° or greater in portions of the central valley of California and in central Arizona, and +4° or more from northern California and southwestern Idaho to the Trans-Pecos region of Texas.

Many stations in the Southwest reported the highest June mean temperature of record, including Winslow, Ariz., (76.4°); Yuma, Ariz., (92.3°); Bakersfield, Calif., (83.7°); Blue Canyon, Calif., (67.2°); Red Bluff, Calif., (82.4°); Las Vegas, Nev., (87.4°); and El Paso, Tex., (85.0°). Record maximum temperatures on individual days were numerous. Some monthly and alltime temperature marks were exceeded, including 107.1° at Oakland (AP), Calif., on the 2d; 109° at El Paso, Tex., on the 21st, and at San Angelo, Tex., on the 15th (alltime maxima at these stations); 102° at San Francisco (AP), Calif., on the 2d (new maximum for June there); 104° at Waco, Tex., on the 15th, a new maximum so early in the year; and 103° at Winslow, Ariz., which equaled the highest June temperature of record there. The average monthly maximum (99.8°) and 11 consecutive days with maxima 100° or higher are new records for any month at El Paso.

In contrast to the extreme heat in the Far West and Southwest, temperature departures of -2° to -4° were general from eastern Nebraska and Minnesota to northern Ohio, and in Georgia and northern Florida. The monthly mean minimum temperature (60.7°) at Louisville, Ky., was the lowest of record there. At Columbus, Ohio, and Reading, Pa., no 90° temperatures were recorded, the first time since 1928 that mark has not been reached at Columbus in either May or June, and only the fourth time since 1898 with no 90° reading at Reading in June. The Charleston, S. C., airport had 63° on the 10th and the Jacksonville, Fla., airport 57° on the 11th, record minima for June, and 61° at Ft. Myers, Fla., on the 12th, was the lowest of record there for so late in the season.

In Wisconsin, Minnesota, and much of Iowa, cool, cloudy weather, with frequent light rain yielding less than usual precipitation totals, delayed crop growth, but cut moisture needs. The maximum temperature at Milwaukee, Wis., (81°) has been lower in only one June since 1871. Cool, wet weather in the central Great Plains perpetuated the pattern established there in January. The average temperature at Omaha, Nebr., for the first 6 months of 1960 (40.3°) is the lowest there since the turn of the century.

PRECIPITATION. --Rainfall totals greater than 1 inch were absent from southwestern Texas and the eastern slopes of the Rocky Mountains westward, with the exception of small areas in southeastern Idaho and along the Washington and northern Oregon coasts. Less than 1/2 inch of rain fell over much of Oregon, Nevada, Utah, and Arizona, and practically all of California was without measurable rain, as numerous stations throughout the Far West reported the driest June in 10 to 40 years or more. Burbank and Eureka, Calif., Winnemucca, Nev., and Roseburg, Oreg., each with a trace, and Olympia, Wash., with 0.59 inch, all experienced the driest June since 1951; Boise, Idaho, with 0.01 inch had its driest June since 1919; Great Falls, Mont., with 0.52 inch, the driest June since records began there in 1893; and Helena, Mont., with 0.25 inch, its second driest June since 1880. Only a trace of precipitation was recorded at Phoenix, Ariz., between March 2 and June 30.

While June precipitation in Wyoming was somewhat greater than in the areas above, the 4.11-inch total during the first 6 months of this year at Cheyenne is the driest such period there since 1916, and the 6-month total of 3.37 inches at Sheridan the lowest since records began there in 1908.

Irrigation requirements in most areas of the Plateau States have exceeded available water supplies; ranges and nonirrigated crops were deteriorating at the end of the month, and the forest and range fire hazard had greatly increased.

Precipitation totals east of a line from southeastern Montana southward to the Panhandle and south-central portions of Texas were generally above 2 inches. The principal exceptions were the Ozark region; along the central Gulf coast, where scattered stations recorded no rain after June 2; from north-central North Carolina to the southern coast of New England; and in scattered local areas elsewhere. Monthly amounts were below the usual values from the upper Mississippi Valley and western Great Lakes southward in a narrow band to southwestern Texas, in Florida, and the other areas mentioned above as receiving less than 2 inches. Extreme variation in precipitation amounts over relatively short distances were common, particularly in the southeastern quarter of the Nation, where much of the rainfall was in the form of scattered showers and thunderstorms, and poorly spaced in time.

The condition of crops and pastures in local areas in the Southern and Middle Atlantic States which were missed by showers suffered considerably from the effects of deficient precipitation. Monthly totals near or below 1 inch were measured in sections of North Carolina, Virginia, and from Delaware to Long Island. Richmond, Va., had the driest June on record with 0. 91 inch; and New York City, with 1. 00 inch, the fourth driest June since 1871.

Heaviest precipitation in the Nation occurred during the last week of the month from southeastern Texas into the central Mississippi Valley along the path of a weak tropical low pressure area. (See UNNAMED STORM.) June records for excessive precipitation were set at Houston, Tex., where the downtown area recorded 14. 27 inches on June 23-26, and 14. 38 inches for the month, the heaviest total since June 1919; and new records for 2 to 7 days, with 13. 26 inches in 48 hours and 14. 25 inches in 72 hours breaking the previous record of 13. 00 inches in 7 days set in October 1949. Much of southeastern Texas received 10 to 20 inches of moisture in 4 days, with the largest reported amount 29. 76 inches at Port Lavaca on the 23d through the 26th.

Further inland, moderate to excessive rainfall associated with this weak storm helped bring precipitation totals to near-record levels. Little Rock, Ark., reported the sixth wettest June in 81 years, and a June record 24-hour total of 4. 61 inches on the 26th and 27th; and Cairo, Ill., recorded 4. 26 inches on the 27th.

Local thunderstorms during the first half of the month in the Texas Panhandle and portions of surrounding States produced widespread heavy precipitation. A record rainfall total (9. 85 inches) for any month was recorded at Amarillo, Tex., with 9. 28 inches between June 2 and 12.

Several stations in the Ohio and middle Mississippi Valleys reported record June rainfall. The Lexington and Louisville, Ky., areas both received the greatest precipitation ever recorded there in June, 11. 69 and 10. 11 inches, respectively; the 24-hour total of 5. 14 inches on the 22d-23d at the latter station was a new record for June and 5. 12 inches in 12 hours the largest such total for any month. Keokuk, Iowa, recorded 11. 17 inches, for the wettest June of record there; Evansville and Indianapolis, Ind., recorded 6. 36 and 7. 28 inches, respectively, their greatest June totals since 1945; and Springfield, Ill., reported 8. 87 inches, the greatest amount for June since 1917.

Scattered areas in the Great Lakes States and the Northeast were also visited by heavy thunderstorms. Over 3 inches of rain was measured at the Binghampton, N. Y., airport in 1 hour on the 17th, with 0. 80 inch falling in 5 minutes and 2. 12 inches in 20 minutes. The City Airport at Detroit, Mich., received 6. 58 inches of rainfall, the wettest June since 1902; and Marquette, Mich., had above-normal precipitation (4. 14 inches) for the third consecutive month. The April through June total of 17. 57 inches there is more than 2 inches more than the previous record for that period.

In the Southeast, Tallahassee, Fla., was one of the very wet spots with 9. 65 inches of precipitation. Heavy hourly precipitation amounts indicate the local severity of the scattered thunderstorms in this area. Augusta, Ga., received 2. 23 inches in 1 hour on the 2d, and Lakeland, Fla., 2. 59 inches in 1 hour on the 25th.

Kalispell, Mont., reported snow in the area on the 20th and 21st.

SEVERE STORMS.--Tornadoes, severe local windstorms, and hail were widely scattered throughout the country from the Rocky Mountains eastward. A severe tornado swept through the Rotterdam-Schenectady area of New York on the evening of June 24 causing damage estimated at $5 million. Some $275, 000 damage at the Amarillo Air Force Base in Texas resulted as a tornado moved over the field on June 10. Numerous tornadoes occurred in other central sections of the Nation, and in Florida. Most caused only minor damage, however.

Small hail accompanied local thunderstorms in numerous locations. Some reports of heavier falls were from Pueblo, Colo., where hail was 5 inches deep on the 8th, and North Platte, Nebr., where stones 2 to 3 inches in diameter fell on the 29th. High winds on June 28-30, with gusts of 57 to 65 m. p. h., caused local damage in the St. Louis area. Lander, Wyo., recorded a record wind on the 20th with a fastest mile of 61 m. p. h., from the southwest.

CONDENSED CLIMATOLOGICAL SUMMARY

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In		In.
Alabama	5 Stations	100	30+	Valley Head	47	[illegible]	Pine Hill	[illegible]	[illegible]	0.67
Arizona	do	118	22+	Maverick	27	[illegible]	Tonto Cr. Fish Hatch	[illegible]	[illegible]	
Arkansas	2 Stations	101	23+	2 Stations	16	17	Clarendon	14.49	[illegible]	1.53
California	Cow Creek	121	15+	do	22	20+	Fort Jones RS	[illegible]	2 Stations	.00
Colorado	2 Stations	108	29+	Allenspark	13	13	Fleming 1S	5.30	2 Stations	T
Connecticut	Falls Village	91	27	Coventry	33	8	Burlington	[illegible]	[illegible]	.77
Delaware	Georgetown 5SW	94	24	Selbyville	45	11	Georgetown 5SW	[illegible]	[illegible]	1.02
Florida	De Funiak Springs	100	30	2 Stations	50	12+	[illegible]	[illegible]	[illegible]	.63
Georgia	3 Stations	100	30+	Blairsville Exp Sta	40	1	Folkston 9SW	[illegible]	[illegible]	.65
Idaho	Swan Falls PH	103	24	3 Stations	19	21	[illegible]	[illegible]	[illegible]	.00
Illinois	Cairo WB City	101	22	Marengo	42	8	[illegible]	13.18	2 Stations	1.77
Indiana	2 Stations	98	23+	2 Stations	41	18	Henryville State For	13.44	[illegible]	1.69
Iowa	4 Stations	94	28+	Saratoga 2E	37	17+	Keokuk L and D 19	11.17	[illegible]	[illegible]
Kansas	do	109	29+	2 Stations	46	17+	Sabetha Lake	[illegible]	Burdett 6SSE	.81
Kentucky	5 Stations	98	23+	Golden Pond 8N	41	18	Carrollton Lock 1	13.12	[illegible]	2.91
Louisiana	Clinton	103	29	Many 4NNE	52	18	Converse	8.07	Pontchartrain Csway	.02
Maine	Woodland	95	29	2 Stations	29	8	Millinocket FAA AP	6.07	[illegible]	1.70
Maryland	2 Stations	95	30+	Oakland 1SE	36	7	Boonesboro	[illegible]	[illegible]	.60
Massachusetts	Plymouth	94	27	West Cummington	32	8	New Salem	7.70	[illegible]	.98
Michigan	2 Stations	90	27+	2 Stations	28	8+	[illegible]	6.60	Fife Lake 2S	1.32
Minnesota	Tracy Power Plant	90	28	do	28	27	[illegible]	7.35	Two Harbors	1.47
Mississippi	Dlo	104	30+	Pelahatchie	47	18	Pleasant Hill	7.71	[illegible]	[illegible]
Missouri	4 Stations	101	23+	Farmington 1E	42	9	Spickard 7W	10.93	Oldfield	.42
Montana	Miles City	102	25	Sula	20	22	[illegible]	[illegible]	Augusta	.00
Nebraska	Imperial FAA Airport	101	17	Harrison	36	[illegible]	Madison	11.21	[illegible]	.24
Nevada	Mesquite	115	3+	Wilkins	17	21	Gibbs Ranch	1.14	[illegible]	.00
New Hampshire	5 Stations	91	28+	First Conn Lake	26	8	Walpole 2	7.13	[illegible]	[illegible]
New Jersey	Flemington 1NE	93	27	Layton 3NW	37	8	Greenwood Lake	5.60	Chatsworth	.38
New Mexico	Artesia	111	19	3 Stations	25	13+	Obar	5.93	3 Stations	.00
New York	Dansville	93	5	Indian Lake 2SW	30	9+	Narrowsburg	9.98	New York WB City	1.00
North Carolina	Whiteville	100	13	Transou	39	1	Gloucester	11.37	Spray	.31
North Dakota	2 Stations	92	26+	Tioga 1E	29	5	Medora 3NNE	[illegible]	Westhope	.43
Ohio	Toledo Blade	95	5	2 Stations	38	10+	Mohawk Dam	7.08	Clarington Lock 14	1.25
Oklahoma	Beaver	111	28	Boise City 2E	47	9+	Hee Mountain Tower	7.77	Parker 2NNW	[illegible]
Oregon	Huntington	102	24	2 Stations	19	21+	Brightwood	3.96	30 Stations	[illegible]
Pennsylvania	Newell	94	29	3 Stations	30	9	Pleasant Mount 1W	8.30	[illegible]	[illegible]
Puerto Rico	Dos Bocas	96	29+	Garzas Dam	55	13	Isabela 4SW	[illegible]	Caonillas Utuado	[illegible]
Rhode Island	Newport	89	27	Kingston	40	8	Block Island WBAP	2.47	[illegible]	.93
South Carolina	3 Stations	100	30+	Parr	43	10	Florence 2N	11.34	[illegible]	1.58
South Dakota	Newell 2NW	101	26	Deerfield 5NW	26	22	Highmore 25N	7.35	Ardmore	.83
Tennessee	5 Stations	98	30+	Mountain City 2	40	1	Carthage	[illegible]	Chickamauga Dam	1.61
Texas	Presidio	117	18	Mount Locke	47	7	[illegible]	29.76	Numerous Stations	.00
Utah	2 Stations	104	29+	Hardware Ranch	16	21	Snake Creek PH	1.12	6 Stations	.00
Vermont	do	92	18+	West Burke	29	9+	Salisbury	6.69	Union Village Dam	1.31
Virginia	3 Stations	100	24	2 Stations	39	10+	Meadows of Dan 5SW	[illegible]	[illegible]	[illegible]
Washington	Priest Rapids Dam	99	28	Mt Spokane Summit	21	20+	2 Stations	4.09	2 Stations	.00
West Virginia	Logan	95	6	Bayard	34	10	Parkersburg WB City	[illegible]	Keyser	1.32
Wisconsin	2 Stations	90	28+	Prentice 5W	28	7	Galesville 3ESE	[illegible]	Milwaukee Mt Mary C	1.32
Wyoming	do	100	25	Kendall	15	21	Stroner 2NW	4.81	Cody 23SW	.02

+ And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F	°F	°F.	°F	°F.		°F		#		°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	990.6	1015.6	90	67	78.3	0.9	97	23	56	18	16	0	66	70	2.74	-1.47	1.36	6	10	0.0	0	6 7	SSW	36	SW	24	6	15	9	5.8	71
Huntsville	[illegible]	992.3	1015.1	90	66	78.1	----	96	30+	56	18	21	0	65	67	3.31	----	1.04	9	5	.0	0	6.9	SE	*32	N	29	6	14	10	5.8	--
Mobile	211	1012.9	1015.2	91	70	80.5	.9	95	30+	64	13+	22	0	68	69	1.68	-4.41	.93	7	7	.0	0	8.4	S	*32	NNW	2+	7	19	4	5.1	--
Montgomery	195	1007.3	1015.3	89	70	79.4	-.2	95	23	62	11	13	0	68	73	4.20	-.49	1.86	11	9	.0	0	7.6	NE	38	SW	1	9	14	7	5.4	72
ALASKA																																
Anchorage	90	1008.5	1013.5	63	47	55.1	1.4	70	22	39	10	1	0	40	59	.26	-.63	.24	3	0	.0	0	9.7	S	*28	S	25	4	9	17	7.2	52
Annette	110	1014.2	1018.3	58	47	52.7	-1.6	70	25	40	2	1	0	46	80	5.69	1.00	1.15	20	0	.0	0	8.8	SSE	*33	SSE	1	2	5	23	8.6	--
Barrow	22	1014.2	1014.8	38	29	33.5	-.4	61	27	20	8	0	21	30	87	.29	.01	.08	10	0	.7	3	10.5	E	*23	ESE	5	1	3	26	8.6	--
Barter Island	39	1012.5	1014.7	38	30	33.9	-1.4	55	22	23	5	0	20	32	92	.50	.08	.11	12	0	3.1	4	9.8	ENE	*26	E	28	0	7	23	8.3	--
Bethel	125	1012.9	1013.4	59	41	50.2	-2.4	72	19+	28	1	3	1	41	73	1.36	.16	.68	15	1	.0	0	12.1	NW	*32	SW	26+	1	10	19	7.8	--
Cold Bay	90	1010.8	1014.7	49	40	44.4	-1.3	58	20	32	3+	0	3	40	83	1.66	-.98	.99	13	0	.0	0	12.9	WNW	*32	SSE	23	0	2	28	9.5	--
Cordova	40	1012.9	1014.7	59	42	50.3	1.0	68	4	31	1	0	1	45	79	2.40	-1.79	.60	16	0	.0	0	5.2	ENE	*21	ESE	10+	1	2	27	9.4	--
Fairbanks	436	989.5	1012.4	68	44	56.0	-3.3	78	27	33	2	14	0	41	58	.73	-.64	.33	6	0	.0	0	6.8	SW	*21	SW	11	5	6	19	7.3	--
Juneau	17	1015.2	1015.9	57	45	51.1	-2.5	66	5	37	5	0	0	45	81	3.51	.33	1.34	20	0	.0	0	9.4	E	*23	ESE	13	2	0	28	9.2	15
King Salmon	44	1011.2	1013.3	60	41	50.4	-1.0	69	5	33	12+	0	0	41	71	1.12	-.52	.41	13	1	.0	0	10.9	S	*35	SSE	25+	2	5	23	8.5	—
Kotzebue	16	1012.9	1013.3	45	35	39.8	-3.5	56	24+	27	1	0	18	36	87	.74	.25	.61	6	0	.4	1	12.0	WNW	*29	WNW	16	2	14	14	7.5	--
McGrath	334	1000.0	1012.8	64	43	53.6	-2.1	73	21+	30	1	7	3	40	60	1.70	-.36	.44	12	2	.0	0	6.6	WNW	*23	S	26	3	8	19	7.6	--
Nome	13	1012.9	1013.5	48	36	42.2	-3.6	63	7	29	2	0	9	36	78	.39	-.69	.26	4	0	.0	0	9.6	WSW	*29	WNW	1	5	7	18	7.0	31
Shemya	122	1015.2	1013.5	46	39	42.6	----	52	30+	36	25	0	0	40	92	.74	----	.25	9	0	.0	0	16.4	WSW	*41	SE	1	0	1	29	9.8	--
St. Paul Island	22	1013.5	1014.9	44	35	39.6	-1.9	53	20	28	1	0	7	36	89	.40	-.91	.13	11	0	.3	T	----	---	--	---	--	1	2	27	9.3	--
Yakutat	28	1014.9	1015.9	57	46	51.2	1.7	61	19	36	1	0	0	46	80	3.88	-1.08	.96	15	0	.0	0	9.0	ESE	*24	ESE	30	1	0	29	9.4	--
ARIZONA																																
Flagstaff	6993	------	------	80	44	62.3	4.0	86	30+	36	8	0	0	--	--	.39	-.14	.22	5	6	.0	0	----	---	--	---	--	13	12	5	4.0	--
Phoenix	1114	969.5	1007.4	105	75	90.0	6.1	114	19	67	1	30	0	45	23	T	-.06	T	0	1	.0	0	6.5	SW	*28	NE	5	21	8	1	2.2	95
Prescott	5014	847.6	1010.5	91	59	74.8	4.7	97	30	51	9	21	0	32	24	.02	-.21	.02	1	4	.0	0	11.2	SW	43	SW	20	19	7	4	3.0	90
Tucson	2584	922.5	1008.0	100	67	83.5	1.4	108	21+	57	1	29	0	37	21	.25	-.05	.18	2	5	.0	0	8.4	SSE	48	S	19	22	6	2	2.3	89
Winslow	4880	851.3	1008.5	95	58	76.4	5.0	103	19	49	1	24	0	34	25	.09	-.20	.09	1	4	.0	0	11.8	SW	*36	SW	20+	16	11	3	3.4	--
Yuma	199	1002.0	1007.2	109	76	92.3	4.5	115	30+	70	10+	30	0	45	23	.02	.01	.02	1	3	.0	0	8.7	S	28	S	4	23	7	0	2.0	98
ARKANSAS																																
Fort Smith	458	997.0	1013.5	89	66	77.4	-.9	100	22	54	17	15	0	66	71	1.78	-2.53	.57	9	5	.0	0	8.8	ENE	38	NE	5	7	10	13	6.0	55
Little Rock	257	1001.0	1014.1	89	68	78.4	-.1	99	22	59	18+	16	0	67	71	7.25	3.82	4.61	9	8	.0	0	7.9	SW	*23	S	27+	9	13	8	5.5	67
Texarkana	361	------	1014.0	90	69	79.4	-.5	97	21	63	18+	20	0	--	--	3.85	.00	1.74	8	6	.0	0	6.6	SSW	--	---	--	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	992.9	1010.3	99	69	83.7	6.8	109	3	60	9	28	0	50	34	.00	-.09	.00	0	0	.0	0	8.5	NW	*25	NNW	17+	23	5	2	1.8	--
Bishop	4108	872.3	1010.2	97	55	75.9	6.5	102	14+	48	22	28	0	--	--	T	-.10	T	0	4	.0	0	----	---	--	---	--	22	7	1	2.4	--
Blue Canyon	5280	840.2	1011.2	76	58	67.2	8.2	87	3	49	8	0	0	--	--	.00	-1.04	.00	0	0	.0	0	8.5	SSW	49	ENE	2	25	2	3	1.7	--
Burbank	699	986.5	1012.8	83	59	70.6	3.1	95	21	55	28+	4	0	54	63	T	-.07	T	0	0	.0	0	7.0	S	*17	E	29	19	8	3	3.1	--
Eureka (U)	43	1014.6	1016.9	59	50	54.5	-1.1	69	1	45	21	0	0	--	--	T	-.66	T	0	0	.0	0	7.1	⊕ NW	34	NW	20	10	8	12	5.7	58
Fresno	331	998.3	1009.9	97	63	80.0	4.3	106	14+	55	29+	28	0	49	39	.00	-.11	.00	0	0	.0	0	7.8	WNW	17	W	20+	24	5	1	1.4	100
Long Beach	34	1012.2	1013.4	79	59	69.0	----	91	30+	53	27	2	0	57	72	T	----	T	0	0	.0	0	6.7	WNW	*18	WNW	24	14	10	6	4.5	--
Los Angeles (U)	312	------	------	79	61	70.1	2.3	95	22	58	28+	2	0	59	74	T	-.07	T	0	0	.0	0	5.4	⊕ W	17	W	24	18	7	5	3.4	70
Los Angeles	99	1009.5	1013.2	72	60	65.8	1.1	82	22	57	28	0	0	58	80	T	-.07	T	0	0	.0	0	7.2	WSW	*16	WSW	18+	11	9	10	5.2	--
Mt Shasta (R)	3544	892.7	1014.6	82	51	66.2	6.4	89	23	38	20	0	0	--	--	.00	-2.23	0	0	1	.0	0	----	---	--	---	--	23	5	2	2.1	--
Oakland	3	1012.9	1013.4	75	56	65.2	3.6	107	2	52	13	2	0	53	71	T	-.15	T	0	0	.0	0	10.9	WNW	*23	NW	24+	14	12	4	3.8	--
Point Arguello(R)	367	1000.3	1013.6	66	52	59.1	----	80	16	47	2	0	0	--	--	.02	----	.02	2	0	.0	0	7.0	---	*22	NW	29+	5	10	15	7.2	--
Red Bluff	341	998.3	1010.8	96	68	82.4	6.4	108	3	59	29	24	0	45	32	T	-.46	T	0	0	.0	0	11.4	S	34	NW	20	21	7	2	2.2	97
Sacramento	17	1009.5	1010.8	95	59	77.1	6.8	110	3+	53	28+	20	0	53	52	.00	-.11	.00	0	0	.0	0	10.0	SW	31	NW	20	26	2	2	1.3	100
Sandberg (R)	4517	862.9	1011.5	84	61	72.8	8.0	94	2	48	8	6	0	--	--	.00	-.04	.00	0	0	.0	0	12.8	N	*32	N	29+	24	6	0	1.5	--
San Diego	19	1009.5	1012.6	73	60	66.4	.8	84	30	57	21	0	0	58	78	T	-.04	T	0	0	.0	0	6.8	NNW	18	SW	4	12	7	11	5.5	50
San Francisco (U)	[illegible]	------	------	66	54	59.6	.5	95	2	50	27+	1	0	--	--	T	-.15	T	0	0	.0	0	10.7	⊕ SW	26	W	28+	--	--	--	----	68
San Francisco	8	1012.9	1013.5	75	54	64.2	4.5	102	2	50	26+	1	0	53	71	T	-.13	T	0	0	.0	0	12.0	WNW	31	WNW	21+	20	6	4	2.9	--
Santa Maria	238	1005.4	1014.1	70	52	61.2	1.1	89	21	42	9	0	0	52	77	T	-.14	T	0	0	.0	0	7.4	WNW	*28	WNW	20	14	13	3	4.0	--
COLORADO																																
Alamosa	7536	774.1	1015.0	79	43	61.0	2.4	89	28	34	1	0	0	--	--	.65	.16	.26	7	5	.0	0	----	---	--	---	--	13	10	7	4.2	--
Colorado Springs	6173	812.4	1012.8	80	51	65.6	.1	96	29+	43	13	7	0	42	52	.93	-.86	.56	8	6	.0	0	10.6	S	*29	N	23+	12	11	7	4.6	--
Denver	5292	838.1	1012.0	82	54	68.3	1.9	97	29	46	13	8	0	41	45	.63	-1.01	.46	5	4	.0	0	10.6	SSW	31	NW	14+	15	7	8	4.5	77
Grand Junction	4849	857.8	1009.9	90	60	74.6	3.4	98	29+	49	11	16	0	25	21	.17	-.28	.13	3	4	.0	0	10.7	ESE	52	NW	14	16	9	5	3.4	90
Pueblo	4639	856.4	1011.7	88	55	71.5	2.4	103	29	46	13	15	0	45	48	1.31	-.09	1.13	5	5	.0	0	8.7	ESE	63	N	23	12	10	8	4.4	83
CONNECTICUT																																
Bridgeport	7	1014.7	1015.7	78	60	69.2	2.3	89	30	52	11	0	0	58	70	.83	-2.64	.61	8	6	.0	0	8.9	SW	35	WNW	25	9	11	10	5.6	--
Hartford	169	1008.8	1014.8	79	57	67.6	-1.3	89	28	45	8	0	0	57	70	4.62	1.00	3.72	10	7	.0	0	7.3	S	31	NW	25	9	9	12	5.5	62
New Haven	[illegible]	1014.7	------	77	58	67.5	1.7	87	30	49	11+	0	0	--	--	2.42	-1.39	.92	8	8	.0	0	6.8	---	32	SW	3	7	12	11	5.8	63
DELAWARE																																
Wilmington	78	1012.0	1015.6	81	61	71.0	-.8	90	30	51	11+	1	0	59	68	1.37	-2.65	.62	7	4	.0	0	8.1	S	40	SW	29	8	12	10	5.4	--
DIST OF COLUMBIA																																
Washington (U)	72	------	------	84	64	74.1	.2	92	24	54	11	1	0	--	--	1.52	-1.90	1.28	[illegible]	--	---	--	----	---	--	---	--	--	--	--	----	--
Wash. Nat'l AP	14	1010.9	1015.5	83	65	74.1	.7	92	24	56	10	2	0	60	62	2.55	-.86	1.52	7	4	.0	0	10.5	S	34	NW	14	10	9	11	5.6	65
FLORIDA																																
Apalachicola (U)	13	1013.0	------	85	73	79.0	-.9	90	30	67	12+	1	0	--	--	3.34	-2.13	1.73	10	7	.0	0	7.4	---	33	N	17	11	13	6	4.6	78
Daytona Beach	31	1014.8	1016.6	85	69	77.1	-2.0	91	24	58	12	2	0	69	82	10.75	4.06	2.69	17	20	.0	0	8.0	SE	*24	SSW	16	6	8	16	6.7	--
Fort Myers	15	1014.5	------	90	71	80.6	.0	95	25+	61	12	20	0	--	--	5.20	-4.00	1.45	11	15	.0	0	7.2	---	*28	E	25	7	12	11	5.9	--
Jacksonville	24	1014.9	1016.3	88	70	79.1	-1.2	96	25	57	11	14	0	69	76	4.70	-2.12	2.12	11	10	.0	0	8.6	SE	39	W	3	8	11	11	5.9	50
Key West	[illegible]	1013.5	1014.7	88	78	82.8	.2	90	30+	73	20	5	0	74	77	2.18	-1.83	.84	10	12	.0	0	10.8	ESE	33	S	20	0	18	12	7.0	59
Lakeland (U)	214	------	------	89	70	79.6	-.5	96	25	64	11	14	0	--	--	8.34	.23	2.90	19	18	.0	0	5.6	---	--	---	--	5	9	16	7.0	57
Miami	7	1014.0	1015.2	87	75	81.1	-.2	90	30+	71	14+	3	0	72	79	6.31	-.51	1.71	19	17	.0	0	8.3	SE	30	NE	10	0	16	14	7.1	--
Miami Beach	9	------	------	85	78	81.5	.0	89	9	73	6+	0	0	--	--	3.43	-1.60	1.15	11	--	.0	0	----	---	¢27	NE	10	0	21	9	6.7	54
Orlando	106	1011.8	1016.2	89	70	79.5	-1.3	94	24	62	13	19	0	69	78	9.50	1.65	2.07	16	15	.0	0	7.2	S	*35	SW	25	5	12	13	6.5	--
Pensacola (U)	13	------	------	87	74	80.4	.8	94	7+	67	2	4	0	--	--	1.59	-3.58	.69	6	3	.0	0	†9.6	---	28	NW	17	--	--	--	----	72
Tallahassee	64	1012.7	1015.4	88	68	78.0	-1.7	94	30+	58	11	10	0	68	76	9.65	2.93	4.48	13	15	.0	0	5.1	NE	*23	WNW	25+	6	13	11	5.8	--
Tampa	19	1013.3	1015.9	89	71	80.0	-.4	94	1	63	12	10	0	70	77	6.36	-1.41	2.67	15	17	.0	0	9.2	ENE	*30	NW	18	6	15	9	6.1	71
West Palm Beach	15	1014.3	1015.4	88	74	80.9	.3	91	30+	67	4	10	0	71	77	6.37	-1.52	3.52	17	18	.0	0	8.8	ESE	*27	S	4	0	16	14	7.4	--
GEORGIA																																
Athens	798	987.8	1016.5	88	65	76.6	-2.3	98	30	59	10+	14	0	64	70	1.92	-1.92	.50	9	8	.0	0	6.6	SW	*18	NE	21+	5	14	11	6.4	--
Atlanta	975	975.0	1015.7	87	67	76.9	-.8	94	30+	62	18+	10	0	64	70	1.26	-2.76	.47	9	8	.0	0	8.1	WSW	*35	SSE	24+	6	13	11	6.2	61
Augusta	143	1008.7	1015.3	89	67	77.9	-1.3	97	30+	54	10	14	0	67	74	4.38	.64	2.49	11	9	.0	0	5.3	SW	*35	E	2	5	8	17	6.7	--
Columbus	385	1001.6	------	90	66	78.3	-.7	97	30	56	11	17	0	--	--	2.20	-1.75	.58	11	12	.0	0	6.2	---	*29	W	14	7	13	10	5.8	—
Macon	356	1002.1	1015.8	91	68	79.1	-1.8	97	30+	59	10	17	0	66	69	5.03	1.28	2.89	11	12	.0	0	7.9	NNE	38	E	3	4	14	12	5.9	67
Rome	637	992.7	------	89	63	76.2	-1.2	97	30	54	1	15	0	--	--	1.97	-2.10	.75	9	8	.0	0	3.2	---	--	---	--	5	13	12	6.2	--
Savannah	48	1013.4	1016.0	88	68	78.2	-.8	96	30	58	11	11	0	69	79	5.51	.34	1.56	11	11	.0	0	7.4	SW	31	NE	7	7	12	11	5.9	74
Thomasville	283	----	------	90	69	79.5	-.2	97	30	59	11	17	0	--	--	7.72	2.87	2.75	10	9	.0	0	----	---	--	---	--	--	--	--	----	--
HAWAII																																
Hilo	31	1015.6	1016.9	82	67	74.6	.2	86	2	64	20+	0	0	67	78	6.73	-.02	.94	22	0	.0	0	9.1	WSW	*30	ESE	2	1	10	19	7.9	37

See footnotes at end of table.

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days Max. 90° F. or above	No. of days Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days .01 inch or more	No. of days With thunderstorms	Snow, Sleet Total	Snow, Sleet Max. depth on ground	Average hourly speed	Prevailing direction	Fastest mile Speed	Fastest mile Direction	Fastest mile Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
HAWAII (Cont'd.)																																
Honolulu	7	1016.3	1016.8	85	73	79.1	1.2	89	4	70	3+	0	0	65	65	0.18	-0.05	0.09	5	0	0.0	0	13.8	ENE	34	NE	29+	6	17	7	5.8	82
Lihue	115	1012.2	1017.3	85	72	78.2	2.0	88	2	65	2	0	0	68	72	1.02	-.63	.31	12	0	.0	0	13.9	NE	26	NE	28+	4	15	11	6.3	71
IDAHO																																
Boise	2842	919.1	1013.6	85	53	68.9	3.8	98	30+	40	21	7	0	36	34	.01	-.83	.01	1	0	.0	0	8.5	NW	*23	NW	20	21	7	2	3.0	87
Idaho Falls 46W (R)	4933	848.6	1013.9	80	46	62.6	3.0	88	30+	33	21	0	0	--	--	1.38	.57	85	4	5	.0	0	9.4	WSW	a36	SW	20	--	--	--	----	--
Idaho Falls 42NW (R)	4790	------	------	80	45	62.1	2.5	87	30+	25	21	0	2	--	--	1.04	-.04	.54	4	--	---	--	5.9	SW	a27	SW	20	--	--	--	----	--
Lewiston	1413	964.4	1015.4	81	51	66.3	.0	92	29+	42	8	3	0	--	--	.58	-1.17	.43	3	1	.0	0	----	---	--	---	--	14	10	6	3.9	--
Pocatello	4444	862.9	1013.1	81	51	66.3	3.3	90	13	39	21	1	0	34	35	1.31	.29	1.08	6	7	.0	0	13.7	WSW	48	SW	20	14	9	7	4.4	85
ILLINOIS																																
Cairo (U)	314	1001.0	------	86	67	76.5	-1.3	101	22	57	18	9	0	--	--	8.07	4.23	4.30	11	10	.0	0	8.3	⊕ SW	42	SW	16	5	13	12	6.7	58
Chicago (O'Hare)	656	989.8	1014.1	76	58	66.6	----	86	4+	48	8	0	0	54	67	4.06	----	.90	15	5	.0	0	11.8	NNE	*32	SW	15	7	5	18	6.5	--
Chicago (Midway)	610	991.5	1014.2	77	59	68.2	-1.2	88	29+	51	17	0	0	54	65	3.77	-.38	1.12	17	7	.0	0	10.3	NE	33	S	23	8	7	15	6.3	52
Moline	589	991.5	1013.3	78	59	68.5	-2.3	87	29+	49	9	0	0	58	72	5.40	.77	2.46	17	8	.0	0	8.6	E	27	N	10	5	9	16	6.9	51
Peoria	654	992.2	1014.3	77	59	68.1	-2.8	89	4	52	17+	0	0	59	75	5.42	1.54	1.61	17	11	.0	0	8.9	S	34	N	4	2	12	16	7.0	55
Rockford	728	987.1	1014.3	77	57	67.1	-2.2	86	27	49	8	0	0	55	68	4.22	-.40	1.42	17	7	.0	0	8.7	ENE	*23	NNE	4	6	12	12	6.4	--
Springfield	589	990.9	1013.7	79	60	69.7	-2.2	89	4	51	8	0	0	61	75	8.87	4.69	2.34	13	13	.0	0	8.9	SSW	54	N	23	4	8	18	7.1	56
INDIANA																																
Evansville	383	998.3	1014.1	84	62	73.4	-1.2	97	22	48	18	7	0	62	69	6.36	2.49	3.05	11	8	.0	0	9.4	SW	41	N	28	6	10	14	6.6	72
Fort Wayne	801	983.7	1014.7	78	57	67.1	-1.9	88	4	46	8	0	0	56	70	6.09	2.53	1.42	10	9	.0	0	11.0	SW	47	SW	23	6	12	12	6.2	74
Indianapolis	793	985.1	1014.6	79	58	68.5	-2.9	89	22	45	18	0	0	60	74	7.28	3.07	3.61	12	7	.0	0	7.7	S	32	S	22	7	10	13	6.1	57
South Bend	768	986.1	1014.1	76	55	65.7	-3.0	86	11	45	8	0	0	54	69	5.75	1.92	2.19	13	7	.0	0	10.1	SSW	*29	WNW	24	8	6	16	6.2	--
IOWA																																
Burlington	694	988.8	1014.1	79	60	69.1	-2.6	91	4	50	17	1	0	59	74	8.96	3.32	3.01	16	14	.0	0	9.8	SSW	56	NW	1	3	14	13	6.7	66
Des Moines	948	983.4	1014.4	79	59	68.9	-1.7	87	15	47	17	0	0	58	73	3.46	-1.53	.72	14	9	.0	0	9.9	ESE	45	SW	16	6	9	15	6.4	51
Dubuque	1065	989.5	1014.9	74	56	64.9	-2.9	84	29+	45	17	0	0	54	67	2.11	-2.98	.48	13	6	.0	0	----	---	--	---	--	5	13	12	6.7	--
Sioux City	1094	972.6	1013.3	78	58	68.2	-2.1	94	3	47	17	1	0	56	68	2.27	-2.14	.63	17	9	.0	0	11.7	SSE	36	N	23	9	7	14	6.3	62
Waterloo	870	982.1	1013.6	78	55	66.2	-3.0	87	27	41	17	0	0	55	69	2.29	-2.47	.60	10	7	.0	0	8.3	S	28	N	16	7	11	12	6.1	--
KANSAS																																
Concordia (U)	1375	963.4	------	81	62	71.7	-2.2	99	28	55	17+	5	0	--	73	5.18	.95	1.77	14	12	.0	0	6.9	⊕ S	26	NW	15	9	11	10	5.8	59
Dodge City	2594	925.8	1011.7	85	61	73.3	-.2	104	29	50	14	13	0	58	64	3.21	.20	1.04	9	10	.0	0	15.8	SSE	48	N	23	12	9	9	4.9	67
Goodland	3645	887.2	1012.0	82	55	68.7	.2	98	17	50	13+	12	0	53	64	2.78	-.24	1.16	12	10	.0	0	13.3	SSE	*40	N	21	15	6	9	4.8	--
Topeka	877	977.3	1012.8	82	63	72.2	-1.6	98	28	52	17	5	0	63	75	3.43	-1.11	1.24	14	14	.0	0	11.7	ESE	36	N	16	6	7	17	6.9	45
Wichita	1321	964.1	1011.7	86	65	75.4	.1	102	28	54	14	11	0	63	69	4.59	-.40	1.69	10	10	.0	0	13.6	SSE	56	N	20	8	7	15	5.9	58
KENTUCKY																																
Lexington	979	980.2	1015.7	82	61	71.4	-1.6	90	16+	50	18	3	0	60	71	11.69	7.48	5.88	13	10	.0	0	7.9	S	--	---	--	8	11	11	5.8	--
Louisville	474	995.6	1014.7	81	61	71.0	-3.2	93	22	48	18	1	0	62	75	10.11	6.05	5.14	15	10	.0	0	5.7	S	32	E	23	8	10	12	5.8	59
LOUISIANA																																
Alexandria	107	1009.5	1014.1	92	68	79.9	----	97	6	58	19	25	0	68	71	2.49	----	1.02	7	8	.0	0	5.8	SSW	--	---	--	14	11	5	4.5	--
Baton Rouge	64	1011.9	1014.9	94	71	82.7	3.1	98	30+	64	19	30	0	69	68	.81	-4.21	.51	7	5	.0	0	8.2	S	--	---	--	9	15	6	4.9	--
Lake Charles	12	1012.5	1013.9	92	72	81.8	1.1	96	20+	66	19+	22	0	69	72	1.44	-3.61	.60	5	7	.0	0	5.5	SSW	*23	W	13	7	14	9	5.7	--
New Orleans (U)	9	------	------	91	76	83.5	1.6	95	7+	64	6	25	0	--	67	3.39	-2.18	2.67	3	3	.0	0	5.5	---	32	NE	6	16	13	1	3.5	88
New Orleans	3	1012.5	1014.6	91	69	80.1	-.4	94	29+	61	12	24	0	70	74	1.68	-3.95	1.24	3	5	.0	0	7.0	S	*20	E	30+	12	17	1	4.1	--
Shreveport	252	1005.1	1014.1	91	69	80.0	-1.2	96	22	61	2	22	0	67	67	7.35	4.71	2.79	7	7	.0	0	9.5	S	--	---	--	12	11	7	4.7	86
MAINE																																
Caribou	624	989.7	1012.7	72	50	61.0	2.6	87	29	33	8	0	0	52	73	4.95	1.00	1.61	14	8	.0	0	10.6	WSW	*35	WSW	6	5	12	13	6.7	--
Portland	61	1009.9	1014.1	75	53	63.7	1.9	88	28	40	10	0	0	55	74	2.17	-1.15	1.18	6	4	.0	0	9.3	S	29	SW	25	10	12	8	5.3	74
MARYLAND																																
Baltimore (U)	14	------	------	84	67	75.3	1.0	91	30	57	10	2	0	--	--	1.17	-2.35	.61	6	--	---	--	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1010.6	1015.8	84	61	72.1	-.1	92	30	49	10	3	0	61	69	1.27	-2.25	.67	8	3	.0	0	8.8	W	33	W	24	12	8	10	5.2	72
Frederick	294	------	------	82	57	69.5	-3.1	88	26+	45	11	0	0	--	--	4.11	.15	1.15	10	--	.0	0	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.(R)	629	990.5	------	76	57	66.4	----	88	28	46	9	0	0	--	71	1.47	-2.71	1.01	8	--	.0	0	14.0	SSW	42	W	25	--	--	--	----	64
Boston	15	1009.3	1014.1	78	61	69.6	2.4	91	28	51	9	2	0	55	64	3.46	-.02	2.46	10	3	.0	0	11.8	SSW	35	W	25	9	10	11	5.6	71
Nantucket	43	1014.5	1015.3	68	55	61.5	.6	78	26	45	9	0	0	56	85	2.09	-1.15	.91	8	2	.0	0	11.9	SW	31	NE	11	5	9	16	7.1	56
Pittsfield	1170	------	------	74	51	62.7	-.3	84	5	37	8	0	0	--	--	4.20	-.39	1.21	12	--	.0	0	----	---	--	---	--	--	--	--	----	--
Worcester	986	978.3	1014.9	74	55	64.5	-.9	84	28	45	8	0	0	53	69	2.07	-1.87	.98	8	3	0	0	7.3	SW	*23	W	25	6	13	11	5.9	--
MICHIGAN																																
Alpena	689	989.2	------	72	47	59.4	-3.1	85	27	33	10+	0	0	49	63	3.74	1.13	1.85	14	5	.0	0	6.8	⊕ W	32	NE	14	5	14	11	6.3	56
Detroit(City AP)	619	988.2	1014.6	77	57	66.9	-1.2	89	4	46	9	0	0	54	65	6.58	3.68	2.05	11	5	.0	0	9.8	S	45	NW	16	9	7	14	5.8	61
Detroit (M. Wayne Co.)	680	990.5	1014.5	77	56	66.2	----	89	4	44	9+	0	0	55	69	6.60	----	2.62	12	8	.0	0	9.9	WSW	--	---	--	9	9	12	5.9	--
Detroit (Willow Run)	722	986.1	1014.2	78	57	67.3	-1.3	90	4	47	9	1	0	54	66	5.46	2.20	2.07	11	8	.0	0	10.9	SW	*37	W	16	7	9	14	6.2	--
Escanaba (U)	594	991.5	------	68	51	59.8	-.9	80	29	41	7	0	0	--	71	3.86	1.06	1.47	13	6	.0	0	9.5	---	35	E	23	6	12	12	6.2	60
Flint	761	986.8	1014.7	75	52	63.3	-4.1	85	11	39	8	0	0	53	69	2.88	-.13	1.21	12	6	0	0	8.5	WSW	*40	WSW	16	7	11	12	6.1	--
Grand Rapids	681	989.2	1014.3	75	54	64.8	-1.9	86	27	44	25	0	0	52	66	2.82	-.53	1.32	13	7	.0	0	9.0	WNW	27	NW	24	5	10	15	6.7	60
Lansing	852	982.7	1014.4	75	53	63.8	-3.6	83	27+	39	8	0	0	53	70	2.95	-.42	1.36	12	6	.0	0	11.8	S	42	W	24	6	10	14	6.2	65
Marquette (U)	677	987.1	------	69	50	59.3	-.3	86	27	41	16+	0	0	--	64	4.14	.68	1.50	14	3	.0	0	7.3	⊕ NW	26	S	1	5	15	10	6.3	71
Muskegon	627	991.2	1014.3	74	53	63.2	-1.2	84	27	44	6	0	0	52	69	2.28	-.59	.86	10	6	.0	0	8.9	W	*28	SW	3	8	9	13	6.0	--
Sault Ste. Marie	721	991.2	1013.9	68	46	57.3	-.8	79	28	38	7	0	0	49	75	3.90	.88	1.20	15	5	.0	0	8.5	WNW	*28	NW	29	9	10	11	6.0	61
MINNESOTA																																
Duluth	1409	972.9	1014.4	69	47	58.4	-1.3	85	27	40	8+	0	0	47	68	2.98	-1.35	1.27	9	4	.0	0	11.8	E	39	SW	28	5	13	12	6.7	63
Intern'l Falls	1179	972.6	1013.3	71	45	58.0	-2.1	85	13	32	7	0	1	47	68	2.55	-1.18	1.22	10	5	.0	0	8.0	WNW	*28	WNW	3	5	13	12	6.4	--
Minneapolis	830	980.7	1014.1	75	53	63.8	-4.4	85	26	41	7+	0	0	52	67	3.08	-1.18	1.18	9	3	.0	0	9.8	SE	*29	W	23	10	8	12	5.5	58
Rochester	1017	977.3	1014.5	74	52	63.0	-3.8	82	26+	39	17+	0	0	53	72	4.23	-.10	2.00	10	9	.0	0	9.6	SE	--	---	--	7	12	11	6.3	--
St. Cloud	1034	976.3	1014.0	73	50	61.6	-3.4	85	27+	39	6	0	0	50	68	2.68	-1.17	.80	9	5	.0	0	----	---	--	---	--	9	10	11	5.7	--
MISSISSIPPI																																
Jackson	305	1002.7	1014.7	92	68	80.0	.1	97	30	57	18	24	0	66	65	2.18	-1.54	.96	5	5	.0	0	5.3	S	24	W	24	11	13	6	4.5	74
Meridian	292	1001.3	1015.1	92	66	78.9	-.2	98	30+	55	18	23	0	66	70	2.87	-1.46	1.37	4	5	.0	0	6.0	SW	*21	W	17	13	11	6	4.3	--
Vicksburg (U)	234	1005.5	------	89	71	79.6	.1	94	21	65	18+	16	0	--	--	3.12	-.19	1.79	4	7	.0	0	7.1	---	33	N	2	11	13	6	4.8	82
MISSOURI																																
Columbia	778	985.1	1012.9	83	61	72.1	-.8	95	28	53	25+	5	0	61	72	3.35	-1.55	.71	15	11	.0	0	9.5	SE	42	N	30	5	10	15	6.8	52
Kansas City	741	979.0	1012.9	83	66	74.4	-1.0	98	28	57	17	4	0	62	67	4.49	-.53	1.28	11	10	.0	0	8.4	ESE	43	NW	30	6	5	19	7.2	65
St. Joseph	809	978.7	------	82	63	72.0	-2.4	97	4	53	17	3	0	--	--	7.22	.76	2.23	12	13	.0	0	9.8	SSE	*40	S	15	7	8	15	6.5	--
St. Louis (RFC)	465	------	------	84	65	74.5	-1.3	95	22	56	17	5	0	--	--	3.99	.19	1.80	9	--	.0	0	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

Station		Pressure		Temperature								No. of days				Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile			No. of days (sunrise to sunset)				
	Elevation of ground	Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb	°F	°F.	°F	°F.	°F.		°F.				°F.	%	In.	In.	In			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
MISSOURI (Cont'd)																																
St. Louis	552	993.6	1014.0	83	64	73.9	-1.2	96	22	54	8	5	0	62	68	7.97	3.60	3.29	12	9	0.0	0	9.5	S	45	NW	30	3	12	15	7.0	67
Springfield	1265	967.2	1013.9	83	62	72.7	-.2	94	22	52	17	7	0	62	72	1.35	-4.21	.50	7	4	.0	0	11.3	SSE	50	NW	28	7	8	15	6.5	43
MONTANA																																
Billings	3567	889.9	1011.9	80	52	66.2	2.2	95	25	41	6	3	0	40	45	1.11	-1.50	.77	8	3	.0	0	11.5	SW	52	NW	20	8	11	11	5.9	57
Butte	5530	830.3	1015.6	71	40	55.6	1.1	82	24	31	18+	0	3	34	--	1.08	-1.20	.85	5	8	T	0	9.1	NW	*31	NW	20	7	9	14	6.0	--
Glasgow	2277	938.7	1012.2	75	49	62.3	-1.3	92	25	37	5	1	0	43	54	1.61	-1.87	.54	11	3	.0	0	----	---	--	---	--	10	7	13	5.9	--
Great Falls	[illegible]	887.6	1012.6	75	49	62.2	1.5	89	24	40	5+	0	0	36	43	.52	-2.44	.23	9	4	.0	0	10.1	WSW	50	SW	16	8	13	9	5.4	69
Havre (U)	2488	924.5	1012.5	77	49	62.9	.0	89	30	37	5	0	0	--	--	1.44	-1.54	.74	13	5	.0	0	9.4	⊖ NE	47	W	1	10	9	11	5.8	68
Helena	3893	873.4	1013.4	75	47	60.8	1.4	89	24	33	5	0	0	37	43	.25	-1.90	.12	5	5	.0	0	10.4	W	40	S	30+	7	12	11	5.6	81
Kalispell	2965	------	------	73	43	58.0	-.4	86	29	31	18	0	1	--	--	.62	-1.81	.23	8	3	.0	0	----	---	--	---	--	10	11	9	5.2	--
Miles City	2629	928.9	1012.4	79	54	66.7	1.5	99	25	42	21	2	0	44	--	1.25	-1.59	.73	6	3	.0	0	10.9	SE	*46	W	20	9	8	13	6.1	--
Missoula	3200	902.5	1015.6	77	43	60.1	-.1	92	24	31	18	2	1	40	52	.53	-1.34	.20	5	3	.0	0	8.2	NW	34	NW	19	12	6	12	5.3	67
NEBRASKA																																
Grand Island	1841	947.5	1012.9	79	58	68.3	-3.0	94	3	49	22	2	0	58	72	3.87	.21	.96	14	14	.0	0	11.4	SSE	--	---	--	8	9	13	5.3	--
Lincoln (U)	[illegible]	------	------	80	60	70.3	-2.5	100	4	52	22+	4	0	--	--	4.96	.86	1.32	13	12	.0	0	10.4	⊕ S	52	W	15	9	7	14	6.0	65
Norfolk	1544	957.7	1012.7	77	57	67.3	-2.0	93	3	47	17	1	0	56	67	6.30	1.52	2.40	14	12	.0	0	----	---	--	---	--	7	10	13	6.2	--
North Platte	2779	915.0	1011.9	78	55	66.5	-2.3	90	3	44	7	1	0	55	71	4.05	1.13	1.24	13	10	.0	0	11.3	SSE	72	N	19	9	8	13	5.8	60
Omaha	978	973.6	1013.3	80	60	70.0	-2.6	93	3	50	17	3	0	59	71	5.69	1.18	2.44	12	12	.0	0	10.8	SSE	54	SW	15	8	8	14	6.2	56
[illegible] N Omaha [illegible]	1323	965.8	- - -	77	59	68.0	-2.5	92	4	49	17	2	0	--	--	7.47	2.96	4.33	14	12	.0	0	----	---	--	---	--	8	6	16	6.6	--
Scottsbluff	3950	878.1	1011.6	81	53	67.0	.5	97	[illegible]	43	21	7	0	48	56	1.21	-1.57	.82	7	10	.0	0	13.6	SE	*43	NW	15	12	8	10	5.5	--
Valentine	2587	922.8	------	78	54	65.9	-.9	94	26	43	24	1	0	--	69	2.75	-.41	1.05	11	7	.0	0	11.3	⊕ S	50	NW	26	9	8	13	5.8	62
NEVADA																																
Elko	5075	845.2	1012.9	84	45	64.3	4.0	92	24	28	21	5	1	29	27	.04	-.66	.02	3	0	.0	0	6.9	SW	*36	S	7	16	10	4	3.4	--
Ely	6257	810.0	1011.7	82	43	62.6	3.0	90	30	26	21	1	1	25	28	.21	-.29	.08	4	8	.0	0	10.0	S	35	S	18	15	8	7	3.9	92
Las Vegas	2162	943.1	1006.6	103	72	87.4	3.8	109	14	60	10	30	0	24	12	T	-.13	T	0	1	.0	0	11.8	SW	*35	NW	4	21	4	5	2.4	95
Reno	[illegible]	862.2	1013.4	88	43	65.2	3.7	95	16+	31	21	9	1	36	36	T	-.42	T	0	0	.0	0	6.0	WNW	31	NW	24	23	3	4	2.4	99
Winnemucca	4299	[illegible]	1013.5	87	47	66.9	2.9	95	24+	26	21	9	1	30	25	T	-.79	T	0	2	.0	0	8.0	W	34	NW	13	18	9	3	3.3	81
NEW HAMPSHIRE																																
Concord	[illegible]	1002.5	------	78	52	65.1	1.0	90	17	37	8	1	0	55	71	3.47	-.15	2.06	11	7	0	0	6.6	SE	19	NW	7+	9	13	8	5.2	67
Mt. Washington Summit	6262	[illegible]	------	51	38	44.6	.2	63	17	22	8	0	5	--	88	5.85	-.41	2.15	15	5	.0	0	26.5	---	‡100	WNW	25	3	3	14	7.2	46
NEW JERSEY																																
Atlantic City(U)	[illegible]	------	------	75	63	69.4	.7	88	30	53	11	0	0	--	--	1.47	-1.52	.46	7	--	.0	0	13.9	---	39	W	25	--	--	--	----	--
Atlantic City	[illegible]	1012.9	1015.6	81	61	70.7	1.0	90	24	47	11	1	0	59	71	.77	-2.22	.33	6	4	.0	0	10.7	S	29	WNW	25	7	10	13	5.8	71
Newark	11	1013.7	1015.1	82	63	72.3	1.8	92	30	55	11	3	0	58	62	1.07	-2.73	.51	8	3	.0	0	9.2	SSW	*33	WNW	25	9	9	12	5.6	--
Trenton	56	1007.4	------	81	62	71.5	.7	90	27	53	11+	1	0	--	--	1.77	-2.10	.66	9	4	.0	0	8.3	---	30	S	17	9	12	9	5.6	67
NEW MEXICO																																
Albuquerque	5310	848.6	1009.4	91	62	76.6	1.7	100	29	55	8+	21	0	39	32	.91	.19	.85	2	4	.0	0	7.6	SW	36	SE	5	17	9	4	3.6	78
Clayton	4969	845.9	1011.2	86	56	70.8	1.2	100	20	50	25+	11	0	--	--	2.66	.75	1.00	10	13	.0	0	----	---	--	---	--	10	12	8	5.0	--
Raton	6379	807.3	1011.9	84	49	66.2	2.3	96	29+	39	13	10	0	--	--	2.11	.39	.69	12	18	.0	0	----	---	--	---	--	10	12	8	5.2	--
Roswell	3612	891.3	1008.8	97	63	80.0	3.2	107	21+	53	12	24	0	52	45	1.24	-.23	.57	9	12	.0	0	10.8	---	66	W	5	14	15	1	3.4	--
Silver City	5371	833.7	1008.2	94	61	77.2	----	102	19	48	10	23	0	--	--	1.38	----	1.35	4	7	.0	0	----	---	--	---	--	16	14	0	3.4	--
NEW YORK																																
Albany	[illegible]	1010.4	1014.5	79	56	67.1	.1	89	28	43	8	0	0	56	67	2.70	-.67	.99	9	5	.0	0	8.7	SSE	41	W	25	11	9	10	5.4	65
Binghamton	1590	956.4	1015.0	74	55	64.5	.3	83	4	44	9+	0	0	53	69	9.46	5.81	3.11	11	9	.0	0	7.4	SSW	56	SE	17	9	9	12	5.8	63
Buffalo	693	987.0	1015.1	77	55	65.8	.3	89	28	45	9+	0	0	54	68	2.48	-.22	.62	10	4	.0	0	9.7	SW	42	SW	24	11	8	11	5.3	70
New York (U)	10	1013.3	------	77	63	70.1	.3	87	30	56	11	0	0	--	--	1.00	-2.70	.58	9	5	.0	0	11.3	---	60	NW	25	9	13	8	5.3	67
New York	19	1013.1	1015.2	80	64	72.2	1.2	89	30	57	10	0	0	57	63	1.49	-1.39	1.08	11	5	.0	0	11.3	S	40	NW	25	7	13	10	5.7	--
Rochester	[illegible]	[illegible]	1014.6	76	55	65.6	-1.0	89	28	43	9+	0	0	53	67	3.05	.20	1.61	8	5	.0	0	9.9	WSW	42	NW	2	10	10	10	5.0	74
Schenectady	217	------	------	79	58	68.6	.6	90	28+	47	8	2	0	--	--	4.94	1.08	1.61	9	5	.0	0	----	---	--	---	--	--	--	--	3.1	--
Syracuse	[illegible]	992.3	[illegible]	78	55	66.6	-1.2	89	28	43	9	0	0	53	64	1.86	-1.82	[illegible]	10	7	.0	0	10.0	WNW	41	W	25	12	7	11	4.9	70
NORTH CAROLINA																																
Asheville (U)	2203	938.0	------	82	60	71.1	-.2	90	24	52	1	1	0	--	--	3.05	-.47	.78	13	7	.0	0	5.9	---	32	N	24	5	14	11	6.5	53
Cape Hatteras(A)	7	1014.8	1015.8	81	69	75.2	-.4	85	24	62	11+	0	0	69	82	7.13	2.76	3.47	9	5	.0	0	11.3	SSW	35	NNE	9	6	14	10	6.6	65
Charlotte	725	988.0	1015.8	88	65	76.4	-.2	94	24	57	11	10	0	64	71	6.56	3.05	1.67	11	8	.0	0	8.5	SW	30	NW	24+	4	12	14	6.6	68
Greensboro	[illegible]	[illegible]	1016.5	84	63	73.9	-.7	94	24	54	27+	7	0	62	70	.95	-2.67	.44	12	8	.0	0	7.1	WSW	26	SSW	2	5	14	11	6.5	72
Raleigh	[illegible]	1002.1	1015.9	86	64	75.0	-.7	96	24	49	10	10	0	64	71	2.53	-1.56	1.37	8	7	.0	0	7.5	NE	*21	SE	17+	6	12	12	6.4	54
Wilmington	30	1014.3	1015.7	86	68	77.1	-.5	95	24	53	11+	10	0	69	80	3.24	-1.25	1.36	8	9	.0	0	9.3	SSW	29	S	17	5	13	12	6.3	74
Winston-Salem	[illegible]	981.1	1016.0	86	65	75.1	.2	95	24	56	1	9	0	62	67	2.91	-.69	.96	12	8	.0	0	8.1	NE	*28	SSW	17+	6	12	12	6.3	--
NORTH DAKOTA																																
Bismarck	1650	953.6	1013.2	74	52	63.2	-1.1	88	27+	39	6	0	0	48	61	3.40	.07	1.45	13	4	.0	0	12.2	WNW	66	N	27	8	14	8	5.5	73
Devils Lake (U)	1471	959.7	------	72	51	61.6	-.8	87	25	40	5	0	0	--	63	2.34	-.84	1.83	8	1	.0	0	8.8	⊕ S	37	NW	1	11	10	9	5.3	64
Fargo	895	976.3	1013.7	75	51	63.3	-1.3	89	26	37	6+	0	0	51	66	1.82	-1.22	.63	9	7	.0	0	15.3	S	53	W	26	8	11	11	5.9	49
Williston (U)	[illegible]	945.5	1012.6	73	51	62.0	-1.0	90	25	39	5	1	0	46	58	5.22	1.63	2.08	8	5	.0	0	8.3	⊕ SE	38	NW	21	10	6	14	5.8	65
OHIO																																
Akron	1210	977.7	1015.7	77	56	66.7	-1.7	88	4	46	7	0	0	55	69	4.86	1.02	1.54	11	8	.0	0	9.9	S	--	---	--	10	8	12	5.5	--
Cincinnati Obs.	761	------	------	82	61	71.3	-1.5	91	22	51	8	4	0	--	--	5.89	1.84	2.39	13	9	.0	0	5.4	---	20	SW	24	--	--	--	----	71
Cincinnati	869	983.7	1015.3	82	60	70.9	-.9	91	22+	51	8	4	0	58	69	6.16	2.12	2.01	13	7	.0	0	8.9	SSW	*30	SSW	16	6	9	15	6.4	--
Cleveland	787	987.1	1014.9	77	55	65.8	-3.6	88	4	43	10	0	0	54	68	3.01	-.04	.79	11	8	.0	0	10.1	S	29	S	16	9	9	12	5.5	74
Columbus (U)	[illegible]	------	------	80	62	71.0	-1.0	90	11+	54	8	2	0	--	--	2.05	-1.61	.49	9	6	.0	0	----	--	--	---	--	--	--	--	----	--
Columbus	815	985.1	1014.9	81	59	69.7	-1.0	89	11+	48	26	0	0	59	70	2.47	-1.86	.74	11	10	.0	0	7.8	SSW	28	W	11	9	10	11	5.7	70
Dayton	1002	979.1	1015.0	80	59	69.4	1.5	88	16+	52	8+	0	0	57	69	4.51	.61	1.83	12	8	0	0	9.8	SSW	47	SW	23	8	6	16	6.2	72
Mansfield	1296	------	------	76	56	66.1	----	86	4	47	8	0	0	--	--	4.40	----	1.28	15	10	.0	0	----	---	--	---	--	8	11	11	5.8	--
Sandusky	603	992.9	------	79	60	69.2	-.7	92	4	52	10	2	0	--	--	4.26	.53	1.35	9	7	.0	0	7.7	---	52	NW	4	11	15	4	4.1	73
Toledo	676	989.4	1014.8	77	54	65.3	-3.3	88	29	43	18+	0	0	56	73	4.86	1.31	1.32	10	9	.0	0	7.1	WSW	28	NW	24	7	13	10	5.9	60
Youngstown	1178	973.0	1015.3	77	55	65.8	-2.2	86	28+	44	8	0	0	55	70	2.97	-.74	1.42	10	6	.0	0	10.1	SSW	*28	W	24	11	7	12	5.6	--
OKLAHOMA																																
Oklahoma City	[illegible]	969.5	1012.4	88	67	77.3	-.2	100	21	58	14	11	0	64	68	5.68	1.75	2.29	10	7	.0	0	13.0	SSE	40	SW	30+	12	12	6	4.8	76
Tulsa	672	988.8	1012.7	87	66	76.5	-1.0	97	21	52	17	12	0	66	72	1.65	-3.50	.54	7	8	.0	0	7.9	S	34	N	1	8	10	12	5.6	66
OREGON																																
Astoria	[illegible]	1020.0	1020.6	64	49	56.3	-1.3	72	2	42	18+	0	0	50	82	1.87	-.79	.77	8	0	.0	0	10.6	NNW	*25	NW	8	7	9	14	6.3	--
Burns (C)	4140	874.4	1015.2	80	46	62.8	2.3	89	24	32	20	0	1	34	35	T	-.85	T	0	2	.0	0	----	---	--	---	--	16	11	3	3.3	--
Eugene	361	1005.4	1019.0	77	47	62.0	.7	88	23	40	17	0	0	--	--	.07	-1.30	.07	1	0	.0	0	8.4	---	*25	W	19	17	6	7	3.5	--
Meacham	4050	------	------	68	45	56.7	2.6	82	28	33	20	0	0	--	--	.74	-1.87	.68	2	1	T	0	----	---	--	---	--	16	9	5	3.7	--
Medford	1312	969.2	1016.5	87	49	68.2	3.3	97	2	39	20	10	0	46	50	T	-.97	T	0	1	.0	0	5.7	NW	*20	W	28	20	7	3	2.4	--
Pendleton	1492	962.8	1015.9	82	53	67.4	.7	94	28	43	21+	6	0	42	42	.52	-.69	.52	1	0	.0	0	12.7	W	*44	WNW	19	19	8	3	3.0	--
Portland	21	1013.2	1018.8	74	52	63.0	.4	86	23	47	16+	0	0	48	61	.52	-1.20	.45	4	0	.0	0	7.7	NW	26	W	19	12	7	11	4.9	70
Roseburg	[illegible]	989.7	1018.3	81	48	64.4	2.3	91	5	37	20	4	0	--	--	T	-1.35	T	0	0	.0	0	6.1	⊕ N	18	NE	6+	19	9	2	2.6	92
Salem	195	1011.9	1019.4	76	46	60.7	-2.1	89	23	39	8	0	0	50	69	.47	-.75	.39	2	0	.0	0	6.2	N	*23	WSW	19	13	10	7	4.1	--
Sexton Summit (F)	3836	885.9	1015.9	72	48	60.0	4.0	82	5+	34	20	0	0	--	--	.00	-1.50	.00	0	0	.0	0	14.4	N	--	---	--	23	5	2	1.7	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max 90°F or above	No. of days: Min 32°F or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, sleet: Total	Max. depth on ground	Wind: Average hourly speed	Prevailing direction	Fastest mile: Speed	Direction	Date	Number of days: Clear	Partly cloudy	Cloudy	Average sky cover	Percent of possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.			3	7	10		%
PACIFIC AREA																																
Canton Island	8	1008.8	1009.2	90	78	84.0	-0.3	92	28	74	3	20	0	73	74	3.49	0.69	2.75	4		0.0	0	13.1	[illegible]	[illegible]	[illegible]	20		3	26	9.2	--
Guam (R)	361	------	------	87	73	80.0	.0	[illegible]	18+	67	14	[illegible]	0			7.54	2.47	1.75	25	1	.0		6.6		34		17					61
Johnston Is.	7	1013.2	1013.8	85	77	80.9	--	86	30+	73	28+	0	0	71	74	.79	——	.26	11	[illegible]	.0	0	14.0		[illegible]	SE	25		19	11	7.0	[illegible]
Koror (R)	94	1016.4	1010.2	88	76	81.5	.3	90	19+	74	30+	5	0	77	87	14.16	1.71	3.55	26	2	.0	0	3.6			N	21		0	30	9.8	38
Majuro	10	1009.8	1010.1	85	76	80.6	--	87	20+	71	6	0	[illegible]	—	—	13.22		2.16	[illegible]	1	.0	0				E	26					
Ponape (R)	120	1004.7	1010.0	87	75	80.8	-.2	89	25+	71	[illegible]	[illegible]	0	76	85	18.36	1.99	2.94	29		.0	0	4.8	[illegible]	[illegible]	[illegible]	5	0	2	28	9.5	53
Truk, Moen Is.		1010.2	1010.5	86	76	81.2	.7	[illegible]	[illegible]	[illegible]	10	1	0	76	[illegible]	11.09	-2.13	1.21	[illegible]	[illegible]	.0	0	5.2	[illegible]	[illegible]	[illegible]	17	0	2	28	9.4	[illegible]
Wake Island	[illegible]	1014.2	1014.6	88	78	82.7	1.4	89	[illegible]	72	29	0	0	74	[illegible]	3.74	1.94	2.52	20	[illegible]	.0	0	[illegible]	[illegible]	[illegible]	[illegible]	29	12	14	4	4.8	
Yap (R)	53	1007.8	1009.8	87	76	81.8	-.3	90	[illegible]	73	24	2	0	77	84	9.46	-.93	2.32	26	2	.0	[illegible]	5.1	E	24	[illegible]	[illegible]	0	1	29	9.7	45
PENNSYLVANIA																																
Allentown	376	1001.5	1015.7	80	56	68.9	-.7	[illegible]	[illegible]	46	8	0	0	[illegible]	70	3.38	-.67	1.03	12	[illegible]	.0	0	8.7	[illegible]	[illegible]	[illegible]	25	[illegible]	[illegible]	11	[illegible]	--
Erie	732	——	1014.8	76	56	66.1	.6	91	[illegible]	[illegible]	7	[illegible]	0	54	[illegible]	2.60	-.27	1.09	10		.0	0	10.6	S	*31	[illegible]	[illegible]	11	9	10	5.0	—
Harrisburg	335	1001.4	1015.2	81	60	70.5	-.6	88	24+	48	8	[illegible]	[illegible]	[illegible]	64	4.17	.53	.95	13	[illegible]	.0	0		[illegible]	34	[illegible]	[illegible]	10	9	11	5.4	62
Philadelphia (U)	35	----	----	82	65	73.5	.9	90	27	[illegible]	[illegible]	1	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Philadelphia	7	1010.5	1015.0	81	60	70.6	-1.5	90	30	50	11+	[illegible]	0	58	67	.71	-3.16	.34	[illegible]	[illegible]	.0		7.6	[illegible]	26	[illegible]	12	7	12	11	[illegible]	70
Pittsburgh (U)	749	------	------	80	60	70.2	-1.5	89	5+	[illegible]	[illegible]	0	0	-	-	3.82	-.01	1.70	10	--	.0		—	-	—	—	—	—	—	—	——	65
Pittsburgh	1151	985.4	1016.1	77	56	66.5	-2.1	89	[illegible]	[illegible]	7	0	0	54	67	2.72	-1.35	.97	10	7	.0		7.8	[illegible]	*25	[illegible]	24	8	3	13	6.0	71
Reading (U)	266	1003.0	------	81	62	71.6	.3	88	27+	50	8	0	0	--	--	2.92	-.84	.73	11	9	.0	0	9.2	—	[illegible]	[illegible]	24	12	7	12	5.5	63
Scranton	940	981.4	1015.5	78	56	67.2	-.6	88	17+	42	[illegible]	0	0	55	68	3.33	-1.10	.97	12	7	.0	0	8.3	[illegible]	[illegible]	[illegible]	25	12	8	10	5.2	[illegible]
Williamsport	527	996.3	1015.3	80	57	68.1	-1.1	87	24	43	8	0	0	56	69	3.57	.15	.89	12	6	.0	0	7.9	[illegible]	[illegible]	[illegible]	17+	11	7	12	[illegible]	—
RHODE ISLAND																																
Block Island	110	1009.9	----	71	59	64.8	1.8	79	27	50	9	0	0	—	-	2.47	-.39	1.09	6	3	.0	0						7	13	10	6.1	—
Providence	55	1008.7	1014.9	77	55	67.5	1.9	87	28+	47	8	0	0	57	70	1.26	-1.91	.33	11	9	0	0	10.5	S	[illegible]	NW	[illegible]	7	14	9	5.6	62
SOUTH CAROLINA																																
Charleston (U)	9	------	------	84	72	78.0	-1.6	93	24	63	10	1	0	—	—	[illegible]	-1.04	1.13	10	--	.0	0	9.6		35	SE	8+					-
Charleston	41	1014.4	1016.4	87	68	77.5	-.4	95	30+	52	10	8	0	70	83	6.76	2.04	3.65	[illegible]	[illegible]	.0	0	7.8	SW	31	[illegible]	2	[illegible]	[illegible]	16	6.7	79
Columbia	217	1002.7	1015.2	91	67	79.0	-.5	99	30+	53	10	19	[illegible]	[illegible]	68	2.37	-1.68	.89	8	[illegible]	.0	0	6.9	SW	23	[illegible]	17	5	15	10	6.4	70
Florence	146	1009.3	1015.1	88	67	77.4	-1.6	97	24	52	10	11	0	67	74	6.09	1.21	1.77	13	12	.0	[illegible]	[illegible]	S	*23	S	[illegible]	2	16	12	6.5	
Greenville	1018	979.1	1015.8	88	66	77.2	.6	96	24	58	10	13	0	[illegible]	69	4.38	1.38	1.25	14	13	.0	[illegible]	6.7	NE	35	[illegible]	[illegible]	3	12	15	6.8	[illegible]
Spartanburg	801	986.2	1015.8	86	64	75.1	-2.1	[illegible]	24	57	10	6	0	[illegible]	72	4.60	1.60	1.26	13	12	.0	0	8.3	[illegible]	[illegible]	[illegible]	24	5	11	14	6.7	
SOUTH DAKOTA																																
Huron	1282	[illegible]	1013.2	77	53	65.0	-3.2	90	[illegible]	41	[illegible]	1	0	[illegible]	76	3.35	.29	1.63	11	8	.0	0	12.0	SSE	[illegible]	SE	19	11	7	12	5.9	[illegible]
Rapid City	3165	900.4	1012.9	78	53	65.7	2.0	98	25	40	21	1	0	48	60	2.19	-1.17	.95	14	7	.0	0	12.6	S	[illegible]	[illegible]	20	10	[illegible]	[illegible]	5.7	60
Sioux Falls	[illegible]	962.4	1013.3	76	55	65.6	-2.4	87	26	46	5	0	[illegible]	53	66	3.97	-.28	1.86	[illegible]	8	.0	0	10.4	[illegible]	[illegible]	[illegible]	[illegible]	6	13	[illegible]	[illegible]	[illegible]
TENNESSEE																																
Bristol	1519	962.4	1016.2	83	61	72.3	.0	90	16	51	1	1	0	61	72	3.95	.28	1.08	15	[illegible]	.0		5.9	[illegible]	[illegible]	WNW	30+	[illegible]	[illegible]	17	6.0	
Chattanooga	670	988.0	1015.1	87	65	76.2	.4	95	30+	56	18+	12	[illegible]	64	70	3.59	-.62	1.88	7	[illegible]	.0		6.8	S	45	SW	24	[illegible]	[illegible]	10	6.2	63
Knoxville	950	980.9	1015.8	85	65	74.8	-1.0	91	24+	56	1	[illegible]	0	63	71	4.89	1.42	.95	14	11	.0	0		SW	47	[illegible]	16	4	16	10	6.5	41
Memphis (U)	271	----	--	86	70	77.7	-1.0	95	22+	60	18	8	[illegible]	[illegible]	[illegible]	4.02	.77	1.97	[illegible]	--	.0	0										
Memphis	263	999.8	1014.4	88	68	77.8	-.5	97	22	59	18+	[illegible]	0	65	67	5.34	2.01	1.78	[illegible]	7	.0	0	7.8	[illegible]	[illegible]	[illegible]	24	9	12	[illegible]	5.7	69
Nashville	577	994.8	1014.6	86	64	75.0	-1.9	94	22	53	18	7	0	64	73	9.37	6.18	4.91	11	7	.0	[illegible]	6.6	S	[illegible]	[illegible]	[illegible]	7	11	12	6.3	[illegible]
Oak Ridge	905	982.7	------	83	63	73.0	-1.2	92	16	52	1	2	0	--	--	7.00	3.09	1.86	11	10	.0	0	7.0	---	*47	——	[illegible]	-	10	12	6.1	—
TEXAS																																
Abilene	1759	951.6	1010.9	96	70	82.8	3.0	105	21+	63	14+	27	0	62	54	1.95	-.84	1.11	[illegible]	7	.0	0	11.5	SSE	38	[illegible]	16	[illegible]	12	2	3.1	87
Amarillo	3590	887.9	1010.5	88	61	74.3	.7	103	20	53	1	13	0	[illegible]	[illegible]	9.85	6.60	6.15	12	12	.0	[illegible]	11.8	S	52	NW	[illegible]	[illegible]	[illegible]	7	4.1	77
Austin	615	990.5	1012.2	95	72	83.4	1.9	102	15	68	14+	27	0	67	63	4.26	1.06	2.76	3	1	.0	0	9.6	SSE	21	[illegible]	[illegible]	12	13	[illegible]	5.0	78
Brownsville	16	1009.8	1012.4	93	74	82.9	.3	97	14	69	9	28	0	73	76	3.19	.14	1.53	4	2	.0	[illegible]	10.1	SE	24	SE	[illegible]	12	15	3	4.5	81
Corpus Christi	41	1012.2	1013.2	91	74	82.1	-.1	95	15+	70	15+	19	0	[illegible]	78	3.77	.89	2.95	[illegible]	2	.0	0	11.0	SSE	37	E	23	11	12	7	4.9	81
Dallas	487	994.2	1012.6	93	73	82.9	1.0	102	15	65	17+	27	0	[illegible]	59	3.22	-.23	1.13	6	5	.0	0	11.7	[illegible]	33	[illegible]	5	16	8	6	4.0	75
Del Rio (U)	957	------	--- -	99	74	86.3	3.6	110	16	68	2	30	0	-	-	.10	-2.32	[illegible]	[illegible]	4	.0	0	——	—	—	——	—	—	—	——		
El Paso	3920	883.8	1008.3	100	70	85.0	4.8	109	21	59	12	28	[illegible]	[illegible]	27	.76	.14	.53	[illegible]	6	.0	0	10.7	SSE	52	[illegible]	23+	21	[illegible]	0	2.3	88
Fort Worth	544	999.2	1012.5	[illegible]	72	82.9	1.5	104	15	64	17	[illegible]	[illegible]	66	61	1.72	-1.67	.54	7	4	.0	0	12.7	S	*41	[illegible]		16	7	7	4.0	--
Galveston (U)	7	------	------	85	77	81.1	-.4	89	3	72	25	[illegible]		-	--	2.35	-1.00	1.52	[illegible]	--	.0	0	12.2	-	34	[illegible]	26				-	83
Galveston	5	1011.5	1013.9	87	76	81.6	-.2	90	19	73	26+	1	0	72	74	2.00	-1.35	1.19	4	2	.0	0	10.8	S	-			[illegible]	[illegible]	[illegible]	4.1	—
Houston (U)	41	1008.5	------	92	75	83.1	1.3	98	14+	70	26+	24	0	--	--	14.38	10.30	8.28	[illegible]	7	.0	0	9.3	⊕ S	[illegible]	SE	23	12	14	4	4.7	81
Houston	50	1010.8	1013.3	92	73	82.4	1.9	98	15	68	1	23	0	71	74	14.66	10.97	8.51	[illegible]	9	.0	[illegible]	10.6	SSE	--	--		12	12	6	4.9	—
Laredo	500	995.6	1010.7	100	75	87.3	1.5	107	16	71	24	28	0	66	56	1.10	-.99	1.01	4	[illegible]	.0	0	12.0	SE	*25	[illegible]	29+	14	12	4	3.9	--
Lubbock	3243	902.1	1010.8	93	64	78.7	2.3	103	27+	59	13+	20	0	58	55	5.72	3.19	2.37	11	12	.0	0	15.2	[illegible]	*43	[illegible]	24	16	12	2	3.4	-
Midland	2854	913.3	1009.7	96	68	82.4	2.3	106	21+	60	7	28	0	54	43	.42	-1.54	.36	3	5	.0	0	12.4	SSE	*39	[illegible]	14	20	7	3	3.0	-
Port Arthur	16	1012.5	1013.8	92	73	82.3	2.2	96	9	66	1	24	0	72	75	1.63	-3.15	.91	5	6	.0	[illegible]	10.7	S	42	SE	[illegible]	10	14	6	5.0	78
San Angelo	1903	945.1	1010.5	100	71	85.5	4.9	109	15	60	14	30	0	60	48	.46	-1.36	.30	2	4	.0	0	12.6	S	*43	[illegible]	1	18	11	1	3.1	--
San Antonio	792	987.8	1012.2	95	72	83.3	1.3	103	15	67	5	28	0	67	64	2.70	-.50	2.39	3	2	.0	[illegible]	9.8	SSE	30	NE	24	12	15	3	4.4	76
Victoria	110	1007.8	1012.6	93	72	82.4	-.7	98	17+	65	1	26	0	71	70	5.26	2.02	2.76	4	3	.0	0	10.9	SSE	‡43	ENE	24	8	18	4	4.8	-
Waco	500	994.2	1012.5	94	72	82.7	.9	104	15	65	14	27	0	67	62	2.73	-.46	2.06	7	6	.0	[illegible]	13.6	S	*46	WSW	[illegible]	16	8	6	4.0	-
Wichita Falls	1020	997.6	1011.4	94	69	81.7	2.1	106	21	59	14	20	0	63	58	2.36	-1.04	1.15	6	8	.0	0	10.6	S	*35	[illegible]	24	14	10	[illegible]	3.7	--
UTAH																																
Milford	5028	843.9	1011.9	90	50	70.0	4.2	96	30	41	22	17	0	--	--	.01	-.44	.01	1	4	.0	0	--	--	--	--	[illegible]	18	8	4	3.1	[illegible]
Salt Lake City	4220	866.9	1011.8	88	54	71.0	3.9	97	28+	38	21	14	0	38	35	.39	-.52	.34	3	5	.0	0	7.8	SSE	30	W	7	14	10	6	3.8	87
Wendover	4237	869.6	1010.2	87	63	75.0	---	97	13	44	21	12	0	--	--	.27	----	.19	3	3	.0	0	----	---	--	--	--	18	7	5	3.4	--
VERMONT																																
Burlington	331	997.4	1013.8	77	53	64.7	-.8	88	17	36	8	0	0	54	70	3.51	-.06	1.48	9	4	.0	0	6.5	SSW	26	SW	17	7	12	11	5.9	72
VIRGINIA																																
Lynchburg	947	982.5	------	83	62	72.4	-.4	91	[illegible]	53	10+	2	0	—	—	2.15	-1.73	1.38	10	7	.0	0	7.1	---	38	N	12	[illegible]	9	12	5.9	72
Norfolk	26	1014.7	1016.2	84	67	75.5	.8	100	24	54	11	8	0	63	68	2.57	-1.59	.90	7	7	.0	0	10.4	SW	31	NE	9	7	11	12	6.0	60
Richmond	162	1010.0	1016.2	86	61	73.7	-.6	98	24	49	27+	9	0	61	70	.91	-2.96	.45	6	6	.0	0	8.0	S	31	N	20	6	12	12	6.4	78
Roanoke	1174	973.2	1016.1	85	61	73.1	.4	92	24	52	9+	5	0	59	66	1.46	-2.24	.52	9	9	.0	0	6.4	SE	--	--		[illegible]	10	14	6.1	
WASHINGTON																																
Olympia	190	1012.2	1019.4	72	44	58.4	-.5	86	23	34	8	0	0	48	71	.59	-.69	.43	5	0	.0	[illegible]	7.6	SW	*23	[illegible]	24+	8	13	[illegible]	5.4	--
Seattle (U)	14	------	------	70	53	61.6	-.2	80	12	47	20	0	0	--	--	.57	-.68	.37	4	—	.0	[illegible]	—	---	32	[illegible]	16+	—	—	—	----	59
Seattle	14	1018.0	1019.1	---	--	----	---	—	—	—	—	—	--	49	66	----	----	—	——		—	—	7.0	N					--	-	----	--
Seattle-Tacoma	386	1005.4	1019.6	69	50	59.5	-.4	82	23	43	20	0	0	49	71	.70	-.60	.40	5	0	.0	[illegible]	9.3	N	*23	SSW	[illegible]	9	8	13	5.8	--
Spokane	2357	946.5	1015.0	77	47	62.2	.8	90	29	36	7	1	0	39	46	.16	-1.01	.11	4	[illegible]	.0	0	9.2	SSW	37	SW	16	11	12	7	4.8	78
Stampede Pass (R)	3958	881.8	1020.1	58	40	49.3	-1.1	72	23+	31	19	0	2	-	-	4.09	.12	1.30	11	[illegible]	1.5	19	----	---	--	--	--	10	6	14	6.2	—
Tatoosh Is. (R)	101	1017.3	1020.5	56	49	52.7	-1.3	61	4	47	28+	0	0	50	89	1.78	-.80	.51	11	0	.0	0	11.2	WSW	[illegible]	S	15	1	9	20	8.1	30
Walla Walla (U)	949	979.7	1014.9	81	55	68.1	.2	93	28	46	7	2	0	--	--	.93	-.28	.86	2	0	.0	0	5.4	⊕ W	23	NW	16	17	9	4	3.1	85
Yakima	1061	977.0	1015.6	82	48	64.8	-.6	92	28+	37	20+	3	0	41	46	.19	-.40	.15	2	0	.0	[illegible]	8.8	NW	*35	[illegible]	[illegible]	16	8	[illegible]	3.5	-
WEST INDIES																																
San Juan, P.R. (U)	47	------	------	87	76	81.7	2.2	93	3	71	17	7	[illegible]	--	--	6.17	1.01	1.68	16	[illegible]			——	---	--	--					--	
San Juan, P.R.	15	1013.8	1016.6	89	73	81.2	1.5	93	12+	70	18+	13	0	72	77	5.84	.47	2.48	16	5	.0	0	10.0	ESE	30	E	2	2	8	20	7.7	44

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90° F. or above	Temperature: No. of days: Min. 32° F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Max. depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear	No. of days (sunrise to sunset): Partly cloudy	No. of days (sunrise to sunset): Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
WEST VIRGINIA																																
Charleston	950	980.4	1015.6	82	59	70.5	-1.5	90	5	50	19	1	0	59	70	4.26	0.33	1.48	12	5	0.0	0	5.2	SW	*28	SSE	22	3	10	17	7.0	--
Huntington (U)	567	------	------	83	60	71.7	-2.4	92	5	53	26+	4	0	--	--	5.34	1.00	2.50	13	--	.0	0	----	---	--	---	--	--	--	--	----	--
Parkersburg (U)	615	------	------	82	60	70.6	-1.8	91	5	52	7	2	0	--	--	6.68	2.50	2.51	12	11	.0	0	5.5	---	30	NW	30	9	[illegible]	13	5.7	58
WISCONSIN																																
Green Bay	689	991.5	1014.3	72	50	61.3	-3.4	85	27	40	8	0	0	52	72	3.07	-.50	1.19	10	7	.0	0	10.1	NE	36	W	[illegible]	7	10	13	6.3	51
La Crosse	652	989.5	1014.0	74	56	65.0	-3.6	83	27+	44	17	0	0	55	67	4.88	1.01	1.42	9	7	.0	0	8.7	SE	*32	NW	28	9	6	15	6.5	--
Madison	857	982.4	1014.2	76	52	63.8	-3.6	85	29+	39	[illegible]	0	0	54	70	2.09	-1.93	.52	13	5	.0	0	9.3	N	30	W	28	6	9	15	6.6	52
Milwaukee	672	990.2	1015.1	72	51	61.4	-3.5	81	29+	43	25	0	0	53	74	3.28	.06	1.11	12	6	.0	0	9.7	NNE	36	N	16	8	9	13	6.3	53
WYOMING																																
Casper	5319	837.5	1010.6	80	48	63.7	1.7	93	25	37	21	2	0	37	45	.40	-1.08	.17	8	8	.0	0	12.1	WSW	*46	W	18	10	12	8	5.1	--
Cheyenne	6131	812.7	1011.9	78	51	64.4	4.1	90	29	38	21	1	0	41	51	1.36	-.74	.89	9	[illegible]	.0	0	14.2	WNW	42	NW	20+	10	11	9	5.1	69
Lander	5563	835.1	1011.7	81	49	64.7	3.2	92	25	33	21	1	0	34	37	.58	-.77	.28	3	6	.0	0	8.1	⊕ SW	61	SW	20	12	11	7	4.8	74
Sheridan	3942	883.8	1013.1	78	50	64.1	2.7	97	25	35	21	1	0	43	52	1.00	-1.60	.57	7	5	.0	0	9.1	NW	60	NW	20	12	9	9	5.0	63

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations – Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

⊕ Wind direction to 8 cpmpass points only.

¢ City Office data.

† Airport data.

‡ Peak gust.

MONTHLY AND SEASONAL HEATING DEGREE DAYS

(Base 65°)

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July-June
ALABAMA														
Birmingham	0	0	1	99	427	525	622	613	637	97	72	0	3093	2780
Mobile	0	0	0	27	299	396	482	450	357	44	32	0	2087	1612
Montgomery	0	0	0	63	332	480	541	500	497	60	43	0	2516	2137
ALASKA														
Anchorage	284	278	514	998	1241	1450	1482	1223	1357	923	483	289	10522	10789
Annette	253	278	371	536	763	796	894	747	831	581	476	363	6889	7096
Barrow	877	856	1037	1499	2130	2747	2792	2129	2311	2090	1363	936	20767	19994
Barter Island	803	907	1059	1555	2203	2665	2866	2141	2370	2072	1256	929	20826	19802
Bethel	442	321	597	1139	1304	2255	1800	1520	1747	1618	667	438	13848	12880
Cold Bay	533	409	519	724	856	1209	1013	1009	1203	1169	779	613	10036	9687
Cordova	409	355	542	799	947	1046	1283	913	1069	837	579	433	9212	9615
Fairbanks	285	320	637	1262	1746	2315	2134	1798	1885	1143	378	261	14164	14158
Juneau	328	378	498	757	911	926	1146	911	1019	713	470	409	8466	8888
King Salmon	422	345	546	926	1044	1829	1278	1215	1466	1193	655	433	11352	11235
Kotzebue	545	366	747	1331	1676	2478	2169	1832	1847	1754	939	750	16432	16151
McGrath	315	324	693	1284	1674	2339	2077	1753	1860	1398	519	333	14569	14390
Nome	604	424	686	1128	1379	2238	1843	1559	1678	1660	759	677	14637	14086
St. Paul	623	504	594	779	874	1203	1147	1112	1241	1405	960	755	11197	10839
Yakutat	379	366	503	750	873	991	1185	906	1052	788	572	407	8772	9354
ARIZONA														
Flagstaff	6	66	254	528	819	1034	1303	1130	786	635	440	87	7088	7525
Phoenix (U)	0	0	0	18	88	304	470	355	56	2	0	0	1293	1492
Phoenix	0	0	0	26	119	342	506	388	36	14	0	0	1451	1698
Prescott	0	0	43	211	550	778	1052	805	460	303	154	0	4356	4533
Tucson	0	0	0	45	189	416	556	493	136	68	5		1908	1776
Winslow	0	0	19	247	642	901	1142	807	430	280	114	0	4582	4702
Yuma	0	0	0	16	34	231	362	195	13	8	0	0	859	951
ARKANSAS														
Ft. Smith	0	0	0	137	591	608	785	796	728	117	62	0	3824	3188
Little Rock	0	0	0	106	543	562	733	723	729	83	64	0	3543	2982
Texarkana	0	0	0	81	489	472	648	656	592	57	37	0	3032	2362
CALIFORNIA														
Bakersfield	0	0	3	33	204	483	492	372	185	118	31	0	1921	2115
Bishop	0	9	68	175	482	751	979	707	406	242	119	0	3938	4222
Blue Canyon	13	59	227	234	310	632	983	827	691	629	482	26	5113	5719
Burbank	0	0	1	15	54	234	417	292	137	82	41	0	1273	1808
Eureka (U)	276	267	209	283	431	535	505	476	443	417	356	310	4508	4632
Fresno	0	0	6	54	292	571	556	443	255	161	54	0	2392	2532
Los Angeles (U)	0	0	0	2	23	145	319	224	111	65	24	0	913	1451
Los Angeles	0	0	0	3	41	173	357	272	227	132	55	3	1263	2015
Mt. Shasta (R)	18	42	226	331	594	863	981	813	651	597	468	39	5623	5913
Oakland	29	30	25	62	272	448	497	373	282	240	174	56	2488	3163
Red Bluff	0	3	14	30	233	522	645	434	297	210	91	0	2479	2546
Sacramento (U)	0	2	10	34	250	512	542	382	246	164	74	0	2216	2600
Sacramento	0	3	12	48	309	559	572	404	262	166	68	0	2403	2822
Sandberg (R)	0	31	134	146	331	647	882	717	450	422	282	10	4052	4243
San Diego	0	0	0	11	23	150	309	228	151	89	45	4	1010	1574
San Francisco (U)	165	119	72	73	146	307	425	305	282	268	243	176	2581	3069
San Francisco	49	38	31	59	245	421	482	385	308	269	202	70	2559	3421
San Jose (U)	1	5	8	47	209	397	450	335	212	211	139	6	2020	2410
Santa Maria	51	43	83	92	186	342	482	391	308	267	256	113	2614	2934
COLORADO														
Alamosa	29	51	325	680	1028	1265	1719	1533	968	657	484	124	8863	8659
Colorado Springs	2	8	224	597	851	938	1141	1247	904	489	310	69	6780	6254
Denver	0	6	191	518	815	876	1151	1159	827	434	245	38	6260	6132
Grand Junction	0	0	138	386	801	1007	1183	1026	697	359	156	0	5753	5796
Pueblo	0	0	134	477	785	917	1282	1166	817	340	167	7	6092	5709
CONNECTICUT														
Bridgeport	0	3	57	273	606	889	1035	868	1016	446	202	10	5405	5896
Hartford	0	8	115	394	736	1041	1203	919	1129	459	156	26	6186	6139
New Haven	0	3	71	315	638	929	1048	871	1027	459	214	18	5593	6026
DELAWARE														
Wilmington	0	0	44	256	605	831	920	840	994	279	144	2	4915	4910
DIST. OF COLUMBIA														
Washington (U)	0	0	33	213	562	709	823	765	897	207	110	0	4319	4258
Washington	0	0	28	195	545	704	824	766	905	200	103	0	4270	4333
FLORIDA														
Apalachicola (U)	0	0	0	3	182	327	358	356	305	31	7	0	1569	1307
Daytona Beach	0	0	0	2	82	196	244	216	240	21	4	0	1005	868
Fort Myers	0	0	0	0	45	91	125	122	105	7	0	0	495	405
Jacksonville	0	0	0	5	160	317	312	294	324	28	2	0	1442	1243
Key West	0	0	0	0	15	7	43	23	27	0	0	0	115	77
Miami	0	0	0	0	25	31	85	55	58	0	0	0	254	178
Miami Beach	0	0	0	0	11	13	60	32	34	0	0	0	150	123
Orlando	0	0	0	0	69	154	175	171	175	11	0	0	755	650
Pensacola (U)	0	0	0	13	236	349	431	403	319	31	20	0	1802	1435
Tallahassee	0	0	0	14	209	367	400	374	333	45	21	0	1763	1519
Tampa	0	0	0	0	59	144	170	164	147	5	0	0	689	674
West Palm Beach	0	0	0	0	28	52	101	80	89	1	0	0	351	248
GEORGIA														
Athens	0	0	8	142	433	601	668	644	746	120	78	0	3440	2800
Atlanta	0	0	8	121	396	575	636	611	713	96	71	0	3227	2826
Augusta	0	0	1	74	344	527	588	546	630	78	35	0	2823	2138
Columbus	0	0	2	81	331	506	552	514	568	76	44	0	2674	2396
Macon	0	0	4	75	317	485	528	499	576	65	33	0	2582	2049
Rome	0	0	3	133	518	629	699	686	769	141	108	0	3686	3138
Savannah	0	0	0	30	261	463	473	441	535	58	15	0	2276	1710
IDAHO														
Boise	12	15	212	470	899	1144	1268	903	681	475	327	23	6429	5890
Lewiston	16	22	194	438	863	929	1188	822	640	428	315	41	5904	5483
Pocatello	17	16	260	506	889	1201	1419	1235	841	545	359	40	7328	6976
ILLINOIS														
Cairo (U)	0	0	2	196	660	684	820	826	911	148	97	0	4344	3756
Chicago	0	0	62	406	939	898	1137	1132	1192	374	221	39	6400	6310
Chicago University	0	0	63	409	915	----	----	----	----	----	----	----	----	----
Moline	4	1	100	462	1002	932	1212	1229	1392	376	203	13	6926	6364
Peoria	1	0	66	421	954	930	1171	1183	1308	374	233	18	6659	6087
Springfield	0	0	56	339	871	865	1082	1114	1257	301	190	14	6089	5693
INDIANA														
Evansville	0	0	22	272	741	780	874	932	1074	236	164	5	5100	4360
Ft. Wayne	0	0	83	412	901	925	1128	1115	1253	404	237	35	6493	6287
Indianapolis	0	0	54	371	878	895	1020	1064	1198	333	214	24	6051	5611
South Bend	1	0	87	430	953	931	1160	1150	1272	441	259	58	6742	6524

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

MONTHLY AND SEASONAL HEATING DEGREE DAYS

(Base 65°)

1959 - 1960

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July-June
IOWA														
Burlington	5	0	82	424	968	932	1203	1208	1286	362	187	14	6671	6101
Des Moines	6	2	131	471	1034	957	1352	1316	1344	415	153	13	7194	6446
Dubuque	13	1	148	569	1131	1043	1376	1313	1369	488	259	57	7787	7271
Keokuk (U)	3	0	70	380	922	----	----	----	----	----	----	----	----	----
Sioux City	4	0	142	516	1084	1000	1464	1431	1454	460	161	15	7731	7012
KANSAS														
Concordia (U)	2	0	85	382	833	842	1244	1176	1142	291	104	8	6109	5323
Dodge City	0	0	56	364	788	849	1112	1150	953	247	123	13	5655	5058
Goodland	2	3	176	514	883	947	1233	1302	1005	392	225	37	6719	6367
Topeka	0	0	63	375	838	840	1136	1113	1145	288	115	3	5916	5209
Wichita	0	0	41	300	748	747	1050	1048	961	203	97	1	5196	4571
KENTUCKY														
Lexington	0	0	24	253	672	813	893	980	1089	243	174	6	5147	4979
Louisville	0	0	11	241	642	771	830	897	1002	197	151	6	4748	4439
Pikeville (U)	0	0	4	174	565	----	----	----	----	----	----	----	----	----
LOUISIANA														
Baton Rouge	0	0	0	19	283	349	468	485	327	12	15	0	1958	1595
Lake Charles	0	0	0	20	297	341	473	486	333	17	9	0	1976	1543
New Orleans (U)	0		0	13	231	274	390	366	264	5	11	0	1554	1175
New Orleans	0	0	0	13	244	295	419	440	292	35	26	0	1764	1317
Shreveport	0	0	0	61	462	443	598	608	511	37	23	0	2743	2117
MAINE														
Caribou	26	67	281	700	1041	1434	1640	1213	1339	895	262	149	9067	10173
Greenville (U)	39	81	257	680	1000	1353	1610	1236	1356	847	149	----	----	----
Portland	2	38	181	522	785	1090	1273	1040	1159	674	321	89	8174	7681
MARYLAND														
Baltimore (U)	0	0	28	191	539	704	841	779	900	197	84	0	4263	4203
Baltimore	0	0	46	255	612	799	891	830	970	254	135	2	4994	4787
Frederick	0	0	70	294	698	876	956	898	1045	313	195	12	5357	4854
MASSACHUSETTS														
Blue Hill Obs. (R)	5	20	118	420	716	997	1163	943	1108	551	215	46	6302	----
Boston	1	7	79	319	611	885	1048	855	992	493	166	33	5489	5791
Nantucket	12	22	94	314	559	828	986	848	1022	618	350	110	5763	6102
Pittsfield	6	35	180	480	834	1139	1318	1102	1274	547	252	101	7268	7694
MICHIGAN														
Alpena *	22	8	228	613	1080	1146	1366	1319	1471	727	370	177	8527	8073
Detroit	0	0	92	408	845	933	1110	1081	1196	446	219	43	6373	6404
Detroit (Willow Run)	0	0	86	421	882	950	1136	1084	1177	448	219	35	6438	6469
Escanaba (U)	43	20	200	620	1127	1102	1371	1252	1385	735	446	156	8457	8657
Grand Rapids	4	0	109	492	937	987	1175	1157	1268	488	254	65	6936	7075
Lansing	7	6	136	504	961	994	1201	1212	1327	497	271	84	7200	6982
Marquette (U)	43	37	204	670	1161	1093	1349	1253	1353	746	507	199	8615	8529
Muskegon	12	0	125	499	946	983	1158	1148	1255	542	283	77	7028	7089
S. Ste. Marie	76	27	231	686	1160	1236	1444	1379	1442	815	410	227	9133	9475
MINNESOTA														
Duluth (U)	51	72	270	----	----	----	----	----	----	----	----	----	----	9574
Duluth	46	63	311	790	1378	1278	1685	1488	1475	786	446	204	9950	9937
Internat. Falls	49	65	359	811	1494	1436	1845	1569	1551	839	388	218	10624	10600
Minneapolis	5	4	152	634	1181	1073	1467	1364	1395	574	247	82	9178	7853
Rochester	11	5	202	645	1201	1094	1414	1333	1422	578	253	97	8255	8095
St. Cloud	12	5	221	734	1279	1201	1639	1499	1463	676	295	122	9146	8893
MISSISSIPPI														
Jackson	0	0	0	71	412	498	606	620	550	57	49	0	2863	2202
Meridian	0	0	0	81	401	523	611	598	534	83	59	0	2890	2333
Vicksburg (U)	0	0	0	76	388	459	591	579	532	40	36	0	2701	2000
MISSOURI														
Columbia	0	0	45	318	824	826	1033	1062	1118	267	129	1	5623	5113
Kansas City	0	0	44	289	776	756	1049	1056	1067	238	86	[illegible]	5363	4888
St. Joseph	2	0	73	383	860	860	1169	1142	1216	310	107	4	6126	5336
St. Louis (RFC)	0	0	25	225	745	760	940	969	1035	235	126	1	5061	4469
St. Louis	0	0	30	258	777	792	970	985	1072	241	129	1	5255	4699
Springfield		1	32	300	774	773	932	968	1002	253	133	0	5168	4693
MONTANA														
Billings	23	3	251	543	1023	950	1291	1145	925	600	287	53	7094	7106
Glasgow	20	19	295	765	1259	1198	1732	1507	1303	669	310	109	9186	8690
Great Falls	26	67	310	621	1055	890	1301	1187	1041	660	409	114	7681	7555
Havre (U)	9	48	320	677	1136	1025	1512	1329	1139	612	334	98	8239	8213
Helena	41	69	351	652	1219	1112	1522	1192	996	682	446	134	8416	8250
Kalispell	94	169	365	693	1283	1260	1568	1321	1164	654	452	212	9235	8055
Miles City	2	3	259	664	1158	1059	1467	1353	1109	577	231	51	7933	7850
Missoula	67	101	337	617	1151	1185	1494	1135	988	636	466	148	8325	7873
NEBRASKA														
Grand Island	4	0	147	498	958	958	1445	1341	1241	406	185	23	7206	6311
Lincoln (U)	2	0	109	414	908	894	1344	1292	1237	355	131	11	6697	5865
Norfolk	3	0	170	539	1051	1027	1526	1446	1397	488	210	23	7880	7065
North Platte	6	1	198	594	1034	1000	1400	1310	1143	457	242	48	7433	6546
Omaha	3	0	115	433	948	923	1370	1319	1290	379	119	12	6911	6160
Scottsbluff	5	8	250	585	998	991	1265	1174	958	493	253	40	7020	6841
Valentine	5	9	235	653	1146	1017	1348	1451	1243	551	268	47	7973	7075
NEVADA														
Elko	7	64	303	521	896	1288	1372	1098	769	608	425	57	7408	7335
Ely	11	51	342	580	909	1205	1418	1200	792	649	447	86	7690	7443
Las Vegas	0	0	[illegible]	48	340	534	736	544	177	77	4	0	2462	2425
Reno	6	44	244	404	757	1096	1156	832	638	497	405	42	6121	6036
Tonopah	0	15	153	275	642	930	1115	906	544	430	249	0	5259	5813
Winnemucca	6	44	276	469	868	1225	1238	961	694	585	368	22	6756	6369
NEW HAMPSHIRE														
Concord	0	28	174	484	788	1102	1287	1032	1150	591	202	69	6907	7612
Mt. Washington Obs.	382	455	632	1070	1326	1636	1797	1604	1848	1153	736	608	13266	----
NEW JERSEY														
Atlantic City (U)	0	0	39	215	551	748	865	800	988	368	157	12	4743	4741
Newark	0	0	39	233	578	832	940	827	959	322	114	0	4844	5252
Trenton (U)	0	0	48	254	598	837	932	828	983	294	106	3	4883	5068
NEW MEXICO														
Albuquerque	0	0	20	250	628	831	979	819	462	211	82	0	4282	4389
Clayton	0	0	98	410	753	864	1052	1072	737	336	141	13	5476	5138
Roswell	0	0	14	191	593	692	848	716	426	120	28	0	3629	3424
NEW YORK														
Albany	0	8	143	423	789	1080	1307	1067	1184	457	152	32	6642	6962
Binghamton	6	11	143	433	859	1065	1210	1120	1305	503	253	75	6983	7537
Buffalo	1	1	111	388	784	1004	1188	1088	1258	494	235	48	6600	6838

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* City office prior to August 25, 1959.

MONTHLY AND SEASONAL HEATING DEGREE DAYS

(Base 65)

1959 - 1960

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July - June
NEW YORK (Cont'd.)														
New York (U)	0	0	40	244	595	805	941	843	971	358	138	0	4935	5050
New York	0	0	32	217	561	791	937	817	959	334	98	0	4746	4989
Rochester	0	3	126	407	806	1052	1244	1122	1313	491	212	56	6832	6863
Schenectady	0	1	110	389	762	1020	1246	1017	1108	433	127	17	6230	7050
Syracuse	0	4	115	393	786	1045	1241	1096	1255	468	176	47	6626	6520
NORTH CAROLINA														
Asheville (U)	0	0	21	204	591	747	800	818	969	226	181	2	4559	4072
Cape Hatteras (R)	0	0	0	41	251	456	570	521	694	116	27	0	2676	2392
Charlotte	0	0	2	153	422	633	691	644	776	124	72	0	3517	3205
Greensboro	0	0	26	222	534	726	776	756	919	182	112	0	4253	3810
Raleigh	0	0	23	189	473	667	721	704	844	159	87	2	3869	3369
Wilmington	0	0	1	76	325	512	584	534	657	93	21	0	2803	2323
Winston-Salem	0	0	17	201	510	702	767	737	879	162	105	0	4080	3721
NORTH DAKOTA														
Bismarck	4	13	273	749	1256	1197	1668	1460	1390	587	290	83	8970	9033
Devils Lake (U)	20	25	331	879	1407	1318	1903	1648	1588	780	339	118	10356	9940
Fargo	8	8	226	746	1329	1205	1762	1550	1526	708	276	87	9431	9274
Grand Forks	21	14	267	805	1413	1310	1839	1649	1574	723	281	99	9995	----
Pembina	19	7	249	843	1430	1338	1867	1592	1548	761	311	109	10074	----
Williston (U)	10	18	312	788	1249	1153	1695	1511	1342	667	292	117	9154	9068
OHIO														
Akron	0	0	91	403	824	970	1075	1083	1261	392	260	38	6397	6203
Cincinnati (U)	0	0	29	242	655	748	846	922	1001	207	148	0	4798	4532
Cincinnati	0	0	37	294	724	841	937	989	1090	262	187	4	5365	5195
Cleveland	0	0	78	348	769	894	1039	1023	1262	430	265	58	6166	6006
Columbus	0	0	62	336	758	878	950	1043	1128	315	205	7	5682	5615
Dayton	0	0	62	351	800	901	1021	1054	1180	336	213	9	5927	5597
Sandusky (U)	0	0	61	359	795	893	1085	1059	1183	389	204	17	6045	5859
Toledo	0	0	98	470	899	983	1113	1078	1211	451	244	62	6609	6394
Youngstown	3	4	107	423	833	970	1081	1085	1253	400	284	48	6491	6172
OKLAHOMA														
Oklahoma City	0	0	24	206	640	644	880	877	777	134	73	0	4255	3644
Tulsa	0	0	14	170	614	618	858	864	818	161	88	0	4205	3584
OREGON														
Astoria	149	188	253	343	546	703	756	611	615	469	428	256	5317	4995
Burns (U)	40	53	307	506	830	1181	1304	1077	793	626	488	92	7297	6918
Eugene	38	25	167	317	612	740	834	648	556	432	347	106	4822	4779
Meacham	116	174	420	604	873	1044	1264	1103	876	703	625	244	8046	7888
Medford	3	18	134	274	642	934	786	653	482	410	299	23	4658	4547
Pendelton	11	13	149	351	816	966	1221	748	643	392	284	40	5634	5204
Portland (U)	24	10	114	234	554	680	853	588	554	361	287	69	4328	4143
Portland	26	32	142	326	659	781	910	653	612	424	337	78	4980	4632
Roseburg	20	18	152	309	622	738	754	621	475	391	314	66	4480	----
Salem	33	31	147	320	615	782	873	673	634	457	384	135	5084	4574
Sexton Summit (R)	114	134	389	437	549	839	1010	901	743	684	623	179	6602	6217
PENNSYLVANIA														
Allentown	0	0	67	311	698	950	1031	921	1089	347	194	11	5619	5880
Harrisburg	0	0	59	280	683	895	961	885	1017	292	171	3	5446	5258
Philadelphia (U)	0	0	28	207	551	760	868	771	922	343	84	2	4436	4523
Philadelphia	0	0	46	246	589	823	947	850	997	274	129	5	4906	4866
Pittsburgh (U)	0	0	55	285	661	807	910	934	1065	287	173	6	5183	5048
Pittsburgh	1	0	73	374	776	927	1055	1045	1203	357	250	32	6093	5905
Reading (U)	0	0	43	250	633	856	932	846	985	283	142	1	4971	5060
Scranton	0	4	94	372	810	1012	1109	1024	1225	393	221	29	6293	6047
Williamsport	0	1	88	343	766	992	1042	941	1122	346	229	17	5887	5898
RHODE ISLAND														
Block Island	2	10	72	282	585	825	984	844	1001	556	298	37	5496	5843
Providence	0	6	101	354	644	942	1106	861	1034	480	196	30	5754	6125
SOUTH CAROLINA														
Charleston (U)	0	0	0	28	235	424	460	445	554	52	5	0	2203	1769
Charleston	0	0	0	38	279	465	483	474	582	65	12	0	2398	1973
Columbia	0	0	1	98	350	550	603	557	655	84	38	0	2936	2435
Florence	0	0	2	95	314	522	584	554	671	82	29	0	2853	2507
Greenville	0	0	3	167	435	631	680	646	763	130	87	0	3542	3060
Spartanburg	0	0	4	160	433	642	685	653	768	128	85	0	3558	3044
SOUTH DAKOTA														
Huron	3	0	186	656	1203	1096	1634	1545	1546	583	259	53	8764	7902
Pierre	2	0	205	634	1158	1065	1529	1485	1394	529	227	35	8263	----
Rapid City	8	1	260	630	1107	949	1266	1325	1140	520	262	58	7526	7535
Sioux Falls	3	0	192	623	1194	1100	1572	1469	1462	576	233	38	8462	7848
TENNESSEE														
Bristol	0	0	7	217	597	777	822	815	968	201	144	0	4548	4148
Chattanooga	0	0	1	148	536	651	709	748	801	140	129	0	3863	3384
Knoxville	0	0	0	157	547	686	744	758	869	158	108	0	4027	3590
Memphis	0	0	0	111	547	602	713	691	763	91	69	0	3587	3137
Nashville	0	0	0	170	587	674	769	845	886	171	121	0	4223	3513
TEXAS														
Abilene	0	0	8	118	518	520	639	642	482	81	40	0	3048	2657
Amarillo	0	0	46	311	671	758	1033	965	696	214	80	0	4774	4345
Austin	0	0	0	38	393	348	492	495	350	17	12	0	2145	1713
Brownsville	0	0	0	3	169	107	173	159	104	5	0	0	720	617
Corpus Christi	0	0	0	5	253	190	299	286	189	10	1	0	1233	1011
Dallas	0	0	0	73	460	423	628	637	488	51	33	0	2793	2272
Del Rio (U)	0	0	0	20	366	337	419	375	233	19	1	0	1770	----
El Paso	0	0	0	33	439	573	691	534	176	58	10	0	2514	2641
Ft. Worth	0	0	0	68	470	450	643	639	499	54	32	0	2855	2361
Galveston (U)	0	0	0	10	253	248	384	400	264	11	3	0	1573	1211
Galveston	0	0	0	8	275	273	404	409	276	13	2	0	1660	1233
Houston (U)	0	0	0	10	293	267	404	427	248	5	2	0	1656	1276
Houston	0	0	0	7	309	306	416	441	260	8	1	0	1748	1388
Laredo	0	0	0	5	205	178	305	249	170	4	4	0	1120	781
Lubbock	0	0	31	223	609	695	846	833	589	142	57	0	4025	3587
Midland	0	0	9	110	534	556	666	643	426	84	28	0	3056	----
Port Arthur	0	0	0	20	313	340	454	461	304	15	6	0	1916	1517
San Angelo	0	0	4	87	499	512	576	580	406	69	31	0	2764	2107
San Antonio	0	0	0	27	374	336	467	433	291	14	7	0	1949	1579
Victoria	0	0	0	14	295	253	377	378	244	7	3	0	1571	1126
Waco	0	0	0	53	448	396	561	562	402	29	13	0	2464	2025
Wichita Falls	0	0	9	139	551	537	744	732	606	84	52	0	3454	3025
UTAH														
Milford	0	0	182	450	814	1126	1358	1026	669	479	264	6	6384	6445
Salt Lake City	1	0	170	423	814	1142	1212	1049	692	419	227	14	6163	5866
VERMONT														
Burlington	5	16	177	525	889	1200	1497	1169	1267	624	147	81	7597	7865

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MONTHLY AND SEASONAL HEATING DEGREE DAYS

(Base 65°)

1959 - 1960

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July - June
VIRGINIA														
Lynchburg	0	0	37	250	577	722	837	809	933	206	146	1	4518	4153
Norfolk	0	0	10	133	424	621	714	679	796	152	37	1	3567	3454
Richmond	0	0	36	217	530	717	807	737	894	184	88	2	4212	3955
Roanoke	0	0	28	238	602	734	829	819	955	206	142	0	4553	4152
WASHINGTON														
Olympia	75	133	236	422	681	809	879	711	652	475	392	192	5657	5501
Seattle (U)	29	36	167	328	541	660	701	581	575	370	291	109	4388	4438
Seattle-Tacoma	59	87	217	396	628	758	804	684	660	465	373	164	5295	5275
Spokane	55	84	311	581	997	1113	1374	990	823	567	420	118	7433	6852
Stampede Pass (R)	260	388	553	709	1018	1176	1321	1135	1049	848	788	463	9708	9149
Tatoosh Island (R)	258	307	294	418	551	616	690	595	666	507	436	367	5705	5724
Walla Walla (U)	6	11	126	321	770	915	1171	719	592	347	236	34	5248	4848
Yakima	34	40	207	446	889	1011	1318	860	730	473	331	70	6409	5845
WEST VIRGINIA														
Charleston	0	0	32	253	634	769	845	892	994	214	177	4	4814	4417
Elkins	1	0	115	----	----	----	----	----	----	----	----	----	----	5773
Huntington (U)	0	0	23	229	604	748	807	871	962	205	157	0	4606	4073
Parkersburg (U)	0	0	44	275	676	820	880	930	1038	248	183	3	5097	4750
WISCONSIN														
Green Bay	20	10	187	642	1173	1128	1359	1286	1405	617	365	124	8316	8259
La Crosse	5	0	156	577	1149	1057	1349	1250	1322	501	196	57	7619	7650
Madison (U)	7	----	----	----	----	----	----	----	----	----	----	----	----	7300
Madison	6	0	137	566	1129	1046	1355	1305	1440	513	296	77	7870	7417
Milwaukee	13	0	117	529	1059	999	1259	1200	1342	515	402	132	7567	7205
WYOMING														
Casper	23	12	312	654	1026	1066	1318	1342	978	615	349	80	7775	7638
Cheyenne	15	15	309	675	949	978	1214	1301	975	542	288	89	7350	7562
Lander	15	8	297	648	1120	1206	1450	1324	982	580	322	67	8019	8303
Sheridan	30	7	296	638	1152	1101	1320	1301	977	612	315	73	7822	7903

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

Note: "Heating Degree Days" has been discontinued in the June issues of this publication, the data appearing therein being shown in the last three columns of the above Table.

STORM SUMMARY

JUNE 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alabama						0	0	4	4	0	0	4	0	2	0	4	0												
Arizona	1	1										4																	
Arkansas	2	2			2			4	3			3																	
California										0	0	3	5																
Colorado	5	3	2	3	5	0	0	5	5	1	5	4	0													0	0	4	5
Connecticut						0	0	3	4	0	0	4	4	0	0	5	0									0	0	3	0
Florida	4	4	0	2	4					0	0	4	0	1	3	0	0												
Georgia	1	1	0	0	3	0	0	0	4	0	0	4	0	5	24	3	0												
Idaho										4				1															6
Illinois	15	8	0	16	6	0	42	6	6	1	13	6	6	1	4	4	0												
Indiana	4	3	0	2	5	0	0	2	4	0		6	3	1	1	5	0									0	0	6	5
Iowa	4	3			4	0	0	6	6	0	5	6	6	5	1	5												4	4
Kansas	8	3	0	0	4	0	3	5	6	0	0	5	0	0	7	5	4									2	0	4	5
Kentucky	1	1			6				2		12	5		2		6										3		5	5
Louisiana	1	1	0	0	4	0	0	4	4	0	0	5	0																
Maine						0	0	5	5					2	1	4	0									0	0	4	0
Maryland										0	0	°4	C																
Massachusetts						0	0	4	3	0	0	3	0	0	9	5	0									0	0	5	4
Michigan	3	3			4				6		3	6				5													
Minnesota	2	2	0	1	4	0	0	5	6	0	0	5	4	0	1	3	0												
Missouri	7	5			5																						9	6	6
Montana	2	2	0	0	4	0	0	5	4					0	0	2	0									0	0	4	0
Nebraska	24	8	1	9	6	0	0	6	7	0	13	6	6	4	0	5	0									0	0	5	5
New Hampshire	1	1	0	0	3					0	0	4	0	0	1	4	0									0	0	4	4
New Jersey	1	1	0	0	0									1	0	4	0												
New Mexico	2	2	0	34	5	0	0	5	5					1	2	0	0												
New York	2	2	0	1	7	0	0		5	0	3	5		0	0	5										0	0	7	4
North Carolina						0	0	3	5	0	0	4	2	0	3	5	0												
North Dakota	4	3			4				3				3																
Ohio	3	3	0	0	5	0	0	5	5			6	4	2	0	6	0												
Oklahoma	3	3	0	0	4	0	0	5	5	0	0	5	0	1	0	4	0									0	0	0	5
Oregon										0	0	3	3	0	0	4	3												
Pennsylvania	2	1			5				3			5	3			5													
Rhode Island														0	2	4	0												
South Carolina										0	3	3	0	1	0	3	0												
South Dakota	3	1	0	0	4			4	6		1	5			1	3												4	
Tennessee														1	2	6	0												
Texas	14	8	0	5	5	0	0	5	5	0	0	5	4	0	8	4	0									5		°6	C
Utah									5			4		2	1														5
Vermont	2	1	0	0	4					0	0	3	0	0	0	4	0									1	0	6	5
Washington																3													
West Virginia								3	3			3	2	1														3	
Wisconsin	2	1	0	0	5	0	0	5	0	0	0	4	0													1	0	0	0
Wyoming	4	3	0	0	7	0	0	3	7																				

° Includes crop damage

C Crop damage.

‡ Includes heavy sleet storm.

# Freezing drizzle and freezing rain, commonly known as glaze.

ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

UNNAMED TROPICAL STORM

June 22 - 28, 1960

Compiled by George W. Cry
Marine Area Section, Office of Climatology
U. S. Weather Bureau

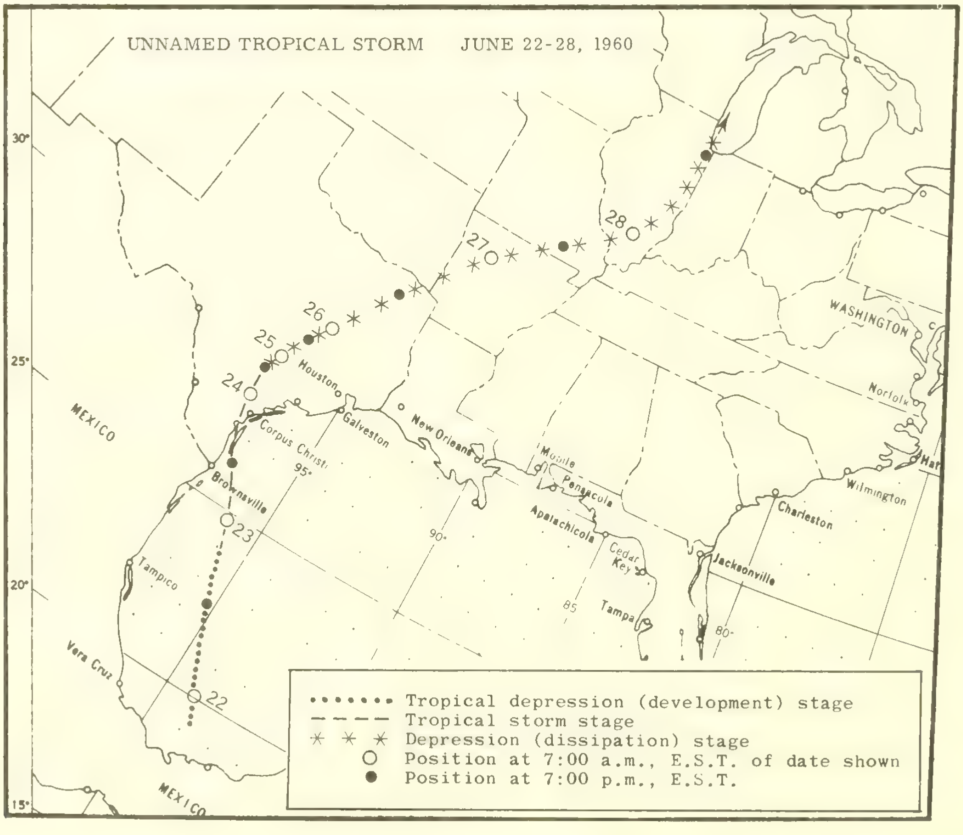
Numerous areas of showers and vigorous squalls in the southwestern Gulf of Mexico on June 22 indicated the development of a tropical depression. Investigation by Navy hurricane hunter aircraft disclosed a weak circulation in the Bay of Campeche. This circulation moved north-northwestward on the 22d and 23d to the lower Texas coast. By early morning of the 24th, the poorly organized storm, still essentially in the development stage, passed between Alice and Corpus Christi, Texas. The lowest pressures at these stations were 1002.4 millibars (29.60 inches) and 1003.7 millibars (29.64 inches), respectively, at 0300 c.s.t. June 24. Briefly sustained winds of 35 to 45 m.p.h. were experienced from the Corpus Christi area, where gusts along the immediate coast reached 50 to 60 m.p.h., to the Houston area.

Wind damage was negligible, especially when compared with the effects of torrential rains which covered a large section, generally to the east of the storm track. Three- or 4-day totals on the 23d-26th were greater than 6 inches in most of the central and upper coastal and south-central areas of Texas, ranging to more than 14 inches in Harris County, to more than 16 inches in northern Refugio County, and to 29.76 inches in 3 days at Port Lavaca.

Widespread flooding developed, not primarily from flooding rivers but from ponding waters on the generally level coastal plain of Texas. Damage in Calhoun County has been estimated at $2 million, and in Harris, Galveston, Brazoria, Matagorda, Jackson, and Refugio Counties at an additional $1.5 million.

A shrimp boat was lost off Mustang Island and another beached near Port Aransas, Tex., where 12- to 18-foot seas were reported during the night of June 23. Tides were not unusually high due to the brief passage of the storm over the Gulf. Moderate to heavy rains accompanied the remnants of the storm across northeastern Texas, southeastern Oklahoma, Arkansas, southern Missouri, and Illinois on June 26-28. Local totals ranged from more than 5 inches in Texas, 4 inches in Oklahoma, and 5 inches or more from southwestern to east-central Arkansas, to over 9 inches south and east of Little Rock, Ark. At Cairo, Ill., 4.26 inches was recorded on the 27th.

Deaths by drowning, totaling 15, have been attributed to high waters from the heavy precipitation associated with this storm: 3 in the Gulf of Mexico in the loss of a shrimp boat, 2 at Port Lavaca, Tex., 4 near Houston, Tex., 2 near San Marcos, Tex., 1 in Jackson County, Tex., and 3 in Jefferson County, Ark.


UNNAMED TROPICAL STORM JUNE 22-28, 1960
30°
25°
20°
15°
MEXICO
MEXICO
22
23
24
25
26
27
28
Tampico
Vera Cruz
Brownsville
Corpus Christi
95°
Houston
Galveston
New Orleans
Mobile
Pensacola
Apalachicola
Cedar Key
Tampa
85
90°
Jacksonville
80°
Charleston
Wilmington
Norfolk
WASHINGTON
Hat
•••••• Tropical depression (development) stage
– – – – Tropical storm stage
✳ ✳ ✳ Depression (dissipation) stage
○ Position at 7:00 a.m., E.S.T. of date shown
● Position at 7:00 p.m., E.S.T.

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

JUNE 1960

Significant flooding occurred during June in the West Gulf of Mexico Drainage towards the end of the month due to excessive rains from a tropical storm. The Navidad River in Texas reached its highest stage since records began. A major flood occurred in northeast Refugio County, Texas, which has been reported as the highest in the history of that area.

Several flash floods were reported in the Upper Mississippi, Missouri, and Ohio River Basins during June.

ST. LAWRENCE DRAINAGE

Lake Erie.--Minor flooding developed during the middle of the month along the upper portion of the Maumee River at Ft. Wayne, Ind., and also along the tributary stream, the St. Joseph, at Montpelier, Ohio. No damage was reported.

Lake Ontario.--Canaseraga Creek in the Genesee River Basin rose to above flood stage levels at Groveland, N. Y., at the middle of June. Much lowland, which was planted to beans, was affected and remained flooded at the end of the month. The Genesee reached flood stage at Scio, N. Y., on the 15th, but no damage resulted. Local flash flooding also occurred to the west of the Genesee River. Damage to homes, business places, bridges, and highways was estimated to be several thousand dollars. A train was derailed north of Olean, N. Y., the night of the 14th, jolting its 60 passengers and injuring 6.

ATLANTIC SLOPE DRAINAGE

Heavy localized precipitation falling over the Connecticut River drainage on the 3d caused high runoff on some tributaries of the Black and the Williams Rivers in vicinity of Ludlow and Springfield, Vt. An unofficial 5 inches of rainfall was reported at Ludlow, Vt., on the Black River, with one house reported washed away.

Thundershower activity in the central and eastern parts of New York State during mid-June produced local flooding in the Hornell area on the 14th. Another flood on the 17th in the Binghamton, N. Y., area resulted in heavy damage. A brief report of this flash flood follows: Heavy showers occurred at the Binghamton, N. Y., airport the afternoon of the 17th. The shower began at 3:39 p. m., e. s. t., with some hail occurring from 3:52 p. m. until 4:25 p. m., when the shower diminished in intensity and ended at 7:45 p. m. The heaviest precipitation on record for Binghamton, for durations up to 2 hours, occurred during this shower when 3. 04 inches was recorded. Hardest hit by the flash flooding were Endicott, N. Y., along the North Side, the Lake Avenue section of Binghamton, N. Y., and along Little Choconut Creek in nearby sections of Johnson City and the town of Dickinson, N. Y. Also affected was the Patterson Creek area of Endwell, N. Y. Major damage was reported to hundreds of homes, to streets, driveways, vehicles, and public utilities. Numerous persons were evacuated from their homes, but no deaths or serious injuries were reported. The Susquehanna River remained well below flood stage during this flash flooding on the smaller streams. Slight overflow occurred along the Chemung River at Chemung, N.Y., on the 15th and 16th, as a result of locally heavy showers that began on the 13th and continued through the 15th. No damage was reported from the slight overflow at Chemung, N. Y.

Heavy thunderstorms on the 14th produced 3 inches of rain over an area at Clearfield, Pa., in the West Branch drainage. Local flash flooding resulted, but damage was minor and only a light rise resulted on the West Branch.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--As described in the May 1960 Flood Report, the Minnesota River crest of May 22 at Mankato, Minn., moved on downstream through St. Paul, Minn., and finally beyond Guttenberg, Iowa, on June 7. In general, June precipitation was spotty and about 1 inch or so below normal. The Mississippi River base flow was above normal at the beginning of June, but by the 16th it had fallen to below normal stages. Showers toward the end of the month brought a rise of 1 to 1-1/2 feet from Winona, Minn., downstream through Guttenberg, Iowa. Rises on tributary streams occurred again at the end of the month, with the Root River rising to near bankfull levels. Excessive rainfall during late afternoon of the 27th produced local flash flooding in the Coon Valley, Wis., area near La Crosse. One man living near Coon Valley was drowned.

Localized flash flooding occurred in Iowa during June on a few of the smaller creeks and streams. Flooding in most instances was minor. Receding flood waters from the May flood held the lower Des Moines River at Eddyville and Ottumwa, Iowa, above flood stage until June 2. The Skunk River produced local flash flooding at Oskaloosa, Iowa, at the end of June. The Wapsipinicon River in eastern Iowa exceeded flood stage for a short time on the 6th in the vicinity of De Witt.

Extensive flooding occurred throughout central Illinois during June. Late spring floods continued into June along portions of the Mississippi and Illinois Rivers, but overflow was generally minor. More serious flooding developed along the Kaskaskia and Sangamon Rivers during the last week of June. The Illinois had again left its banks at some points and was still rising on the 30th. Considerable damage was done to growing crops, principally corn and beans, in bottom land along the Kaskaskia and Sangamon. Less damage was noted in the Illinois Basin, but persistent flooding this year has prevented the planting of crops in some sections. No deaths were reported from any of the floods.

Missouri Basin.--Local flash flooding occurred in the upper Missouri Basin during June. In Montana the Redwater Creek, a Missouri River tributary, in Richland County west of Sidney, Mont., was described to have reached its highest stage in 50 years on the 20th. Several bridges and some roads were washed out. In North Dakota local runoff following an intense rain on the 19th flooded basements in Mandan, N. Dak., and did other minor damage. Severe flooding occurred over a small area in the Timber Lake, S. Dak., section on the 19th, as a result of an estimated 6-inch rain falling in 1 hour.

Considerable flash flooding was observed in Nebraska during June. Heavy rains on the 19th and 20th falling over an area just west of Omaha, Nebr., produced flash floods over a small but well populated area in west Omaha along the Little and Big Papillion Creeks. The Big Papillion Creek crested nearly 6 feet over bankfull stage at Fort Crook, Nebr., on the morning of the 20th. A second crest of about 4 feet over bankfull occurred that same day about 9 p. m. Weather Bureau warnings were issued for the affected areas.

Flash floods developed suddenly during the early morning hours of the 20th over the tributaries lying south of the Elkhorn River in Nebraska. The Elkhorn itself exceeded flood stage only from West Point to near Waterloo. The Elkhorn was bankfull from Norfolk, Nebr., southeastward. Heaviest rainfall was reported over the basin of Union Creek and southeastward over the Shell, Maple, and Pebble Creeks. Average rainfall south of the Elkhorn on the 19-20th was near 3 inches. However, there were much heavier unofficial amounts reported. One life was lost in this flood when an automobile plunged into a highway washout near Stanton, Nebr. Damage to crops was very heavy in the flooded valleys. Overflow in downtown areas of Madison, Meadow Grove, Battle Creek, and Scribner, Nebr., caused heavy water damage to residences in those communities. Very heavy damage was reported to highway grades, highway bridges, and culverts, and to railroad grades and bridges.

Moderate to locally heavy flooding was centered on the Big Blue River in the Crete, Nebr., area. Considerable overflow developed during the period, June 12 through the 14th, in the upper Republican watershed on Beaver Creek. The heaviest urban flooding was reported in the Herndon, Kans., area where 13 families evacuated their homes. Two lives were lost near Colby, Kans., as a result of an automobile being swept off a highway into a normally dry creek bed following a very heavy rain. Losses were comparatively light in most areas, except on the lower portion of Beaver Creek in Nebraska where damage to crops was reported as heavy.

Heavy rains on the 5th and 6th in northern Missouri produced 1- to 3-foot overflow on the middle and upper reaches of the Grand River. Flooding developed again at the end of the month.

Ohio Basin.--Flash floods occurred on the 23d on small streams in the vicinity of Louisville and Lexington, Ky. Numerous dwellings and several businesses in Louisville and Jefferson County sustained flood damage. The Brashears Creek, a tributary stream in the Salt River drainage, exceeded flood stage by 6.6 feet at Taylorsville, Ky., during the early morning hours of the 24th.

Excessive rains fell in Indiana over the middle reaches of the White and Wabash Rivers and over the upper half of the East Fork during the afternoon of the 22d and ending the morning of the 23d. As a result of this rainfall, rivers rose rapidly, inundating thousands of acres of crops during the following week or 10 days. Crests were several feet above flood stages in most instances and were extremely high for the time of year. A boy fell into the White River at Hazleton, Ind., and was swept away and drowned. Flood damage was heavy and an estimated 90 percent or more of the total was crop damage. Weather Bureau forecasts were accurate considering the extreme variability of the rainfall over the drainage areas. In most instances warnings were received in ample time to permit removal of machinery equipment and livestock from low areas. Several thousands of dollars worth of hay and wheat was also saved as a result of the warnings. Along the lower Wabash the warnings allowed several days in which to stregthen an 18-mile earthern levee, saving 50,000 acres of crops.

Heavy rains falling in the Knoxville, Tenn., area during the late afternoon and early evening of the 24th produced serious flash flooding in low areas and in some city streets.

White Basin.--The flooding on the lower White River during June was the result of high water on the middle and upper reaches of the stream during the latter part of May.

Arkansas Basin.--Many streams in this basin were above normal at the beginning of June. Heavy rain fell over the Cimarron River Basin beginning on the 5th. The Cimarron River crested 2 feet above flood stage on the morning of the 8th. Minor agricultural damage resulted.

Red Basin.--On the 7th local flash flooding developed in the Red River Basin on Prairie Dog Town Fork in the eastern and southern parts of Hall County and in Childress and Hardeman Counties, Texas.

A tropical low produced heavy rainfall over the Ouachita and Caddo Rivers in Arkansas during the period of the 25th through the 27th. Overflow developed on the Ouachita at Arkadelphia, Ark., and along the Caddo River at Glenwood. Damage was limited to property on lowlands along the Ouachita.

WEST GULF OF MEXICO DRAINAGE

A weak tropical storm moved inland from the Gulf of Mexico near Corpus Christi, Tex., early on the 24th. Remnants of this low moved very slowly northward, passing just east of Austin early on the 26th, leaving general soaking rains in south-central and eastern Texas. More than 15 inches of rain fell in the metropolitan area of Houston from the 23d to the 27th. Considerable flow was carried by all the bayous in the Houston area, and some flooding was reported upstream along Cypress Creek. Minor flooding occurred on the lower reaches of the Trinity and Brazos Basins. Considerable damage resulted from poor drainage, and 6 lives were lost in Houston bayous mainly due to carelessness.

Flood stages were reached at all points on the Colorado River of Texas from Columbus, Tex., to the Gulf, and there was general flooding of the lowlands on the 26th and 27th. There was a sharp rise on the Colorado River at Smithville, Tex., below Austin, but no flooding. The crest at Smithville was 15.5 feet on the morning of the 26th, which was 9.5 feet below flood stage. At Columbus, the river reached the flood stage of 24 feet for a short time during the afternoon of the 26th. At Wharton there was an estimated crest of 27.5 feet at 2 p. m. on the 27th, 1.5 feet above flood stage. The heavy rains that caused the flood began on the 24th and ended by the 27th and ranged from 5 to 15 inches from Austin to the Gulf. The 3-day total for Austin was 4.26 inches; Smithville, 6.30 inches; Columbus, 12.02 inches; and Wharton 13.68 inches. Actual flood damage, aside from damages to coastal towns receiving the full impact of the tropical depression, appears to be small. There was minor damage to some growing crops below Columbus; some evacuation of families at Matagorda; and road and highway damage at Bay City and below. This storm produced more or less continuous rains over the watersheds of the Lavaca, Navidad, and Guadalupe Rivers on the 24th, 25th, and early morning of the 26th. Amounts over the Lavaca and Navidad Rivers ranged from 7.5 inches over the upper portion to 15 to 20 inches over the lower sections. Rains up to 10 inches fell over middle reaches of the Guadalupe Basin.

The heavy rains over San Marcos River and Plum Creek caused major rises in those streams, with a crest of 13 feet over flood stage at Gonzales, Tex., on the Guadalupe resulting mostly from inflow from these two tributaries. As this crest moved downstream it produced flooding at Victoria, Tex., the only city affected by this flooding. Some evacuation was required with parts of the city flooded for several days. Two deaths were caused by the flood when a car was swept off a low water bridge on a small tributary of the Guadalupe River.

The Navidad River at Ganado, Tex., reached the highest stage since our records began in February 1953. This stage was 33.5 feet, or 12.5 feet over the flood stage.

Flooding also extended into the Gulf drainage streams between the Nueces and Guadalupe watersheds. A major flood occurred in northeastern Refugio County, which has been reported as the highest in the history of that area. Fortunately the area flooded was used for ranch and farmland, with the exception of the small town of Tivoli. This town of about 400 people was flooded to a depth of 1 to 5 feet. No loss of life was reported. Extensive damage was caused to crops in the area of heaviest rainfall.

PACIFIC SLOPE DRAINAGE

Columbia Basin.--A combination of weather factors made the spring crest of 1960 in the lower Columbia River at Vancouver, Wash., the lowest since the spring rise of 1944. The Columbia at Vancouver reached flood stage of 16 feet late on the 6th, crested at 16.5 feet on the 8th, then fell below flood stage on the 11th.

FLOOD STAGE DATA

(All dates in June unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
ST. LAWRENCE DRAINAGE	*Ft.*			*Ft.*	
Lake Erie					
St. Joseph: Montpelier, Ohio	10	15	18	11.5	16
Maumee: Ft. Wayne, Ind.	15	15	15	15.6	15
Lake Ontario					
Canaseraga Creek Groveland, N. Y.	11	15	15	12.7	15
Genesee: Scio, N. Y.	8	15	15	10.05	15
ATLANTIC SLOPE DRAINAGE					
Chemung Chemung, N. Y.	12	15	16	13.0	16
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Wapsipinicon· Dewitt, Iowa	10	6	6	10.0	6
Skunk: Oskaloosa, Iowa	15	28	29	16.2	29
Des Moines: Eddyville, Iowa	15	May 25	2	19.5	May 27
Ottumwa, Iowa	9	May 25	2	12.0	May 27
Fox: Wayland, Mo.	15	22	23	18.4	23
Sangamon: Riverton, Ill.	13	May 26 21	2 1/	16.5 E20.6	May 28 25
Petersburg, Ill.	497S	25	29	#498.5S	27
Oakford, Ill.	471S	26	27	E471.3S	27
La Moine: Ripley, Ill.	22	24	29	25.4	26
Illinois: Havana, Ill.	14	23	1/	15.5	July 2
Beardstown, Ill.	14	May 26 23	5 1/	15.2 18.3	May 30 July 2
Kaskaskia: Shelbyville, Ill.	13	23	29	E17.7	25
Vandalia, Ill.	18	25	1/	E22.0	30
Carlyle, Ill.	21	May 28 30	3 1/	21.6	May 31
Mississippi: Hannibal, Mo.	16	May 8	4	18.8 18.6 18.6 18.8	May 13 May 23 May 27 May 29
Louisiana, Mo.	15	May 8	4	17.3 17.3 17.65	May 14 May 20 May 27
Clarksville, Mo.	23	Mar. 29 13 24	11 18 25	27.9 24.4 23.1	May 27 15 24-25
Winfield, Mo.	23	Mar. 29 13 25	12 18 25	28.6 24.8 23.1	May 27 16-17 25
Grafton, Ill.	18	May 9	2	20.3	May 27
Missouri Basin					
Papillion: Fort Crook, Nebr.	19	20	20	24.9 22.7	20 20
Elkhorn: West Point, Nebr.	12	20	21	12.7	21
Red Willow Creek: Red Willow, Nebr.	12	21	21	12.1	21
Beaver Creek: Beaver City, Nebr.	11	12	14	13.0	13
Sappa Creek: Oberlin, Kans.	11	10 13	11 14	13.5 #12.0	11 13
Stamford, Nebr.	14	15	16	15.9	15
Republican: Orleans, Nebr.	9	12	12	10.6	12
Lincoln Creek: Seward, Nebr.	15	20	21	16.55	20
Little Blue: Deweese, Nebr.	6	21	22	10.35	21
Fairbury, Nebr.	10	12 21 23	12 21 24	10.3 11.3 10.9	12 21 24
Big Blue: Crete, Nebr.	16	20	23	21.7	22
Barneston, Nebr.	18	21	21	18.05	21
Blue Rapids, Kans.	20	22	25	23.0 21.95	22 24
Grand: Pattonsburg, Mo.	25	5	6	26.8	6
Gallatin, Mo.	21	6	6	21.4	6
Chillicothe, Mo.	24	6	6	24.35	6
Sumner, Mo.	26	6 13	7 14	28.8 28.1	7 13

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	*Ft.*			*Ft.*	
Ohio Basin					
Brashears Creek: Taylorsville, Ky.	20			26.6	24
Green: Lock 4, Woodbury, Ky.	33	29	1/	35.0	July 1
Vermillion: Danville, Ill.	18	23	24	19.8	24
Embarrass: Ste. Marie, Ill.	18	26	27	19.0	26
Eel: Bowling Green, Ind.	17	24	24	20.1	24
East Fork: Columbus, Ind.	10	24	24	10.7	24
Seymour, Ind.	14	24	26	17.4	25
Bedford, Ind.	20	27	1/	26.7	28
Williams, Ind.	10	27	1/	15.1	28
Shoals, Ind.	25	30	30	25.15	30
White: Centerton, Ind.	603S	24	25	606.0S	24
Spencer, Ind.	14	24	26	20.9	25
Newberry, Ind.	18	26	27	19.3	27
Edwardsport, Ind.	15	25	30	21.6	28
Petersburg, Ind.	16	26	1/		
Hazleton, Ind.	16	27	1/		
Wabash: Montezuma, Ind.	14	23	27	22.6	24
Clinton, Ind.	18	24	26	22.25	24
Terre Haute, Ind.	14	24	27	18.7	25
Hutsonville, Ill.	*20	26	28	20.9	27
Riverton, Ind.	18	27	28	18.5	28
Vincennes, Ind.	16	28	1/		
Mt. Carmel, Ill.	17	28	1/	21.2	July 1
New Harmony, Ind.	15	30	1/	16.4	July 3
White Basin					
White: Clarendon, Ark.	26	2	12	27.5	3
St. Charles, Ark.	25	2	11	25.4	4
Arkansas Basin					
Cimarron: Waynoka, Okla.	8	8	8	10.0	8
Red Basin					
Caddo: Glenwood, Ark.	10	27	27	11.5	27
Ouachita: Arkadelphia, Ark.	17	28	28	19.75	28
WEST GULF OF MEXICO DRAINAGE					
Trinity: Liberty, Tex.	24	27	28	25.6	28
Brazos: East Columbia, Tex.	30	28	28	30.3	28
Navidad: Ganado, Tex.	21	25	1/	33.5	27
Lavaca, Edna, Tex.	21	26	28	23.4	27
Guadalupe: Gonzales, Tex.	20	26	28	33.0	26
Cuero, Tex.	23	27	30	28.7	28
Victoria, Tex.	21	26	1/	28.9	30
Atascosa: Whitsett, Tex.	20	26	27	23.7	27
Nueces: Tilden (nr), Tex.	11	25	28	16.2	27
PACIFIC SLOPE DRAINAGE					
Columbia Basin					
Columbia: Vancouver, Wash.	16	[illegible]	11	16.5	8

* Tentative
E Estimated
1/ Continued at end of month
S̄ Above sea level
# Highest stage observed

RAWINSONDE DATA

Average monthly values

ALBANY, N. Y. (1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	86	16.5	83	204	2.3
1,000	30	127			224	2.1
950	30	558	15.1	71	274	5.6
900	30	1,020	13.0	69	285	9.5
850	30	1,499	10.3	67	286	12.2
800	30	2,002	7.3	64	276	14.2
750	30	2,528	5.4	48	275	15.7
700	30	3,093	2.5	47	273	17.1
650	30	3,685	- .9	41	273	20.2
600	30	4,324	- 4.4	34	273	22.0
550	30	4,998	- 8.5		272	24.7
500	30	5,737	-13.0		274	27.0
450	30	6,524	-18.3		274	29.7
400	30	7,401	-24.8		276	31.9
350	30	8,360	-31.7		276	33.8
300	30	9,432	-39.7		279	37.5
250	30	10,657	-48.1		280	42.2
200	30	12,105	-54.0		285	41.6
175	30	12,961	-55.1		281	39.4
150	30	13,944	-56.1		281	33.8
125	30	15,102	-57.1		278	32.3
100	30	16,510	-58.2		273	30.1
80	30	17,920	-56.4		279	18.5
60	30	19,757	-53.6		73	2.1
50	30	20,934	-51.8		92	9.5
40	29	22,388	-50.0		89	13.8
30	29	24,276	-48.1		90	16.3
25	28	25,482	-46.1		90	17.7
20	23	26,970	-43.7		90	16.1
15	11	28,892	-39.4			
10						

ALBUQUERQUE, N. MEX. (839 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,619	17.5	48	73	2.5
1,000	30	85				
950	30	531				
900	30	1,005				
850	30	1,506				
800	30	2,029	18.4	37	311	1.4
750	30	2,575	15.5	35	304	7.0
700	30	3,160	11.3	38	297	10.5
650	30	3,769	6.6	41	289	12.4
600	30	4,426	1.2	47	277	14.6
550	30	5,111	- 4.6	53	262	16.9
500	30	5,863	-10.1	50	257	18.7
450	30	6,661	-15.3	39	264	18.1
400	30	7,549	-21.4		254	16.7
350	30	8,520	-28.6		245	17.1
300	30	9,605	-37.2		245	21.2
250	30	10,841	-46.5		240	22.9
200	30	12,293	-55.3		246	29.0
175	30	13,138	-58.7		249	30.7
150	29	14,094	-62.5		257	28.6
125	29	15,208	-66.3		258	23.3
100	29	16,552	-67.6		255	15.2
80	29	17,900	-65.0		163	1.2
60	29	19,678	-59.5		88	10.5
50	29	20,826	-56.5		86	14.0
40	26	22,247	-53.6		89	17.5
30	23	24,102	-50.2		87	15.5
25	22	25,299	-48.0		91	17.5
20	22	26,777	-45.7		95	13.6
15	16	28,698	-41.6		91	16.7
10	5	31,404	-35.5			

AMARILLO, TEX. (891 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,095	17.6	73	198	4.5
1,000	30	94				
950	30	540				
900	30	1,012				
850	30	1,502	20.4	51	222	15.0
800	30	2,025	18.9	43	242	14.6
750	30	2,573	15.6	41	262	14.8
700	30	3,158	11.3	44	274	12.6
650	30	3,769	6.7	46	277	13.0
600	30	4,425	1.5	49	287	11.3
550	30	5,116	- 3.5	47	288	11.9
500	30	5,867	- 8.6	43	277	12.4
450	30	6,669	-14.1	41	275	15.2
400	30	7,560	-20.4	36	275	17.9
350	30	8,535	-27.5		276	20.4
300	30	9,625	-35.9		271	22.5
250	30	10,867	-45.3		268	25.3
200	30	12,323	-54.9		266	29.3
175	30	13,168	-58.9		269	30.1
150	30	14,124	-62.9		272	28.2
125	30	15,239	-66.1		272	22.5
100	30	16,583	-67.6		272	11.1
80	29	17,939	-64.3		37	.6
60	27	19,721	-58.6		86	10.3
50	27	20,873	-56.0		87	13.8
40	24	22,304	-52.7		88	15.9
30	23	24,172	-49.7		92	16.7
25	19	25,362	-48.0		89	18.3
20	15	26,845	-45.8		91	20.8
15	7	28,807	-41.0			
10						

ANCHORAGE, ALASKA (1010 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	30	10.3	69	178	4.7
1,000	30	112	10.2	66	177	6.2
950	30	534	8.7	59	157	4.5
900	30	983	5.8	61	130	3.7
850	30	1,449	2.6	65	110	3.7
800	30	1,937	- .8	73	100	5.4
750	30	2,448	- 4.1	70	109	6.8
700	30	2,990	- 7.5	68	111	8.2
650	30	3,558	-10.9	64	121	6.4
600	30	4,175	-14.7	60	134	6.8
550	30	4,823	-18.8	54	132	7.2
500	30	5,533	-23.7	50	128	8.9
450	30	6,286	-29.2	45	129	7.8
400	30	7,127	-35.3		137	6.6
350	30	8,044	-42.1		136	6.0
300	30	9,071	-48.9		139	7.4
250	30	10,259	-51.1		182	5.6
200	30	11,724	-46.9		209	6.2
175	30	12,611	-46.0		203	5.8
150	30	13,638	-45.6		201	6.4
125	29	14,855	-46.0		198	6.4
100	28	16,342	-46.3		187	5.2
80	28	17,826	-45.9		160	5.1
60	26	19,741	-45.7		131	5.6
50	26	20,955	-45.7		110	7.6
40	26	22,441	-45.4		107	9.9
30	25	24,361	-44.9		97	12.4
25	24	25,586	-43.5		93	15.5
20	24	27,093	-41.6		95	19.0
15	18	29,065	-38.6		91	21.2
10	7	31,899	-34.9			

ANNETTE, ALASKA (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	37	9.4	87	138	4.1
1,000	30	151	9.0	86	133	3.9
950	30	572	6.4	85	166	8.5
900	30	1,016	3.8	85	179	9.5
850	30	1,479	1.3	85	194	9.3
800	30	1,966	- 1.1	78	205	9.1
750	29	2,476	- 4.0	73	212	9.9
700	29	3,020	- 6.8	67	218	9.9
650	29	3,590	-10.0	59	224	10.7
600	29	4,209	-13.7	49	231	12.4
550	29	4,858	-17.7	41	233	13.8
500	29	5,574	-22.7	40	230	14.4
450	29	6,331	-28.0	40	245	17.3
400	29	7,176	-33.8	42	241	21.4
350	29	8,100	-40.0		241	27.8
300	29	9,138	-46.4		247	20.6
250	29	10,337	-50.0		252	22.0
200	29	11,798	-49.0		250	20.8
175	29	12,677	-47.5		254	18.5
150	29	13,696	-47.9		254	16.9
125	29	14,895	-48.9		249	12.4
100	29	16,359	-49.1		249	9.7
80	29	17,823	-49.3		238	6.4
60	26	19,709	-49.3		148	2.7
50	26	20,904	-48.9		105	5.8
40	25	22,368	-48.1		95	7.8
30	23	24,262	-47.0		89	12.4
25	23	25,472	-45.9		89	16.9
20	20	26,976	-44.2		93	18.8
15	14	28,923	-39.5		90	20.2
10	9	31,727	-36.4			

ATHENS, GA. (989 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	246	19.7	89	20	0.6
1,000	30	145				
950	30	587	20.4	73	285	3.3
900	30	1,056	18.1	70	270	5.6
850	30	1,544	15.1	72	256	6.2
800	30	2,055	12.0	70	259	4.9
750	30	2,591	9.2	61	265	4.9
700	30	3,163	6.1	53	269	4.9
650	30	3,762	2.7	51	275	3.7
600	30	4,411	- .8	48	257	4.9
550	30	5,091	- 4.7	45	284	4.1
500	30	5,846	- 9.1	43	283	5.2
450	30	6,645	-14.2	39	285	7.6
400	30	7,538	-20.1	37	295	8.0
350	30	8,514	-27.0		286	9.5
300	30	9,607	-35.5		290	13.0
250	30	10,850	-45.2		288	14.8
200	29	12,309	-55.9		296	17.1
175	29	13,150	-60.3		297	18.1
150	29	14,104	-63.7		298	17.7
125	29	15,217	-65.7		297	14.4
100	29	16,571	-66.4		299	8.2
80	29	17,927	-64.6		11	3.7
60	29	19,706	-59.3		77	11.3
50	28	20,859	-55.9		86	15.2
40	23	22,291	-52.5		95	17.1
30	21	24,162	-50.2		93	15.2
25	21	25,361	-48.0		95	15.0
20	15	26,847	-45.1		93	15.5
15	9	28,773	-41.3			
10						
7						
5						

BARROW, ALASKA (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	8	- 0.7	88	104	4.5
1,000	30	116	- .5	85	123	4.7
950	30	527	1.2	75	187	4.9
900	30	962	.6	63	218	7.8
850	30	1,419	- 1.3	61	225	9.3
800	30	1,900	- 3.9	61	231	11.7
750	30	2,404	- 6.5	59	230	12.8
700	30	2,944	- 9.3	51	226	13.8
650	30	3,510	-12.6	46	224	15.3
600	30	4,121	-16.4	44	221	14.0
550	30	4,768	-20.6	40	225	17.1
500	30	5,469	-25.4	44	225	16.9
450	30	6,219	-30.8	44	226	17.1
400	30	7,052	-36.9	42	229	19.0
350	30	7,964	-43.1		229	21.2
300	30	8,990	-49.0		228	20.8
250	30	10,186	-48.3		219	16.3
200	30	11,670	-44.2		214	11.9
175	29	12,561	-43.9		215	9.1
150	29	13,597	-43.8		214	8.0
125	29	14,822	-43.7		199	5.8
100	29	16,324	-43.3		184	5.1
80	29	17,827	-42.9		157	4.1
60	28	19,770	-42.4		121	5.6
50	27	21,001	-42.1		120	7.0
40	27	22,511	-41.9		101	7.4
30	26	24,458	-41.3		98	11.7
25	26	25,699	-39.8		94	12.6
20	24	27,223	-38.0		89	15.7
15	22	29,227	-35.4		89	17.9
10	8	32,079	-31.3			
7						
5						

BARTER IS., ALASKA (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	15	- 0.2	93	73	5.6
1,000	30	115	.9	91	79	7.2
950	30	537	5.0	77	103	8.5
900	30	972	4.6	66	128	5.2
850	30	1,436	2.8	62	197	2.9
800	29	1,927	.5	60	228	4.5
750	29	2,436	- 2.4	63	234	6.6
700	29	2,987	- 5.9	64	230	8.0
650	29	3,551	- 9.8	59	226	8.9
600	29	4,176	-13.9	57	224	10.9
550	29	4,819	-18.4	51	226	11.3
500	29	5,536	-23.4	45	224	12.8
450	29	6,283	-28.9	42	225	15.5
400	29	7,129	-35.2	42	228	16.3
350	29	8,046	-42.0		227	20.0
300	29	9,073	-49.1		228	20.8
250	29	10,262	-50.4		226	19.2
200	29	11,733	-46.1		225	13.8
175	29	12,624	-44.6		223	10.7
150	28	13,660	-44.3		221	7.8
125	28	14,882	-44.0		215	6.6
100	28	16,380	-43.7		182	4.7
80	28	17,881	-43.1		166	3.7
60	28	19,822	-42.5		119	4.1
50	28	21,053	-42.1		108	5.6
40	27	22,566	-41.7		102	8.2
30	27	24,519	-40.5		93	11.7
25	27	25,764	-39.4		93	13.4
20	27	27,296	-37.8		97	15.5
15	27	29,289	-35.5		88	18.3
10	27	32,131	-32.2		91	22.5
7	21	34,652	-29.5		89	23.7
5	8	37,056	-27.4			

BETHEL, ALASKA (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	4	6.8	88	289	4.1
1,000	30	109	7.8	83	307	4.7
950	30	532	7.1	72	336	1.9
900	30	975	4.5	70	220	1.4
850	30	1,439	1.6	70	184	2.1
800	30	1,925	- 1.4	69	174	3.1
750	30	2,437	- 4.4	67	148	3.7
700	30	2,978	- 7.6	65	157	3.7
650	30	3,549	-10.8	61	143	3.1
600	30	4,165	-14.4	55	162	2.5
550	30	4,817	-18.5	52	199	1.6
500	30	5,525	-23.2	49	181	2.3
450	30	6,282	-28.4	43	207	1.0
400	30	7,125	-34.8	39	173	3.3
350	30	8,044	-41.7		243	1.9
300	30	9,073	-49.0		245	4.3
250	30	10,255	-53.0		257	7.4
200	30	11,712	-47.5		268	6.4
175	30	12,597	-46.5		229	5.2
150	30	13,622	-45.9		216	4.3
125	30	14,835	-46.0		201	3.5
100	30	16,320	-46.0		165	3.3
80	30	17,806	-45.7		150	5.1
60	30	19,724	-45.6		114	6.4
50	30	20,940	-45.7		109	7.8
40	28	22,424	-45.7		100	8.7
30	26	24,343	-45.3		99	13.0
25	20	25,566	-44.2		95	14.2
20	16	27,074	-42.9		91	18.5
15						
10						
7						
5						

BISMARCK, N. DAK. (954 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	27	505	12.2	78	158	1.9
1,000	27	107				
950	27	538			75	.8
900	27	996	13.8	59	224	8.7
850	27	1,477	11.7	54	257	9.7
800	27	1,982	8.5	56	271	10.3
750	27	2,512	5.2	56	275	13.2
700	27	3,074	2.0	49	273	17.3
650	27	3,664	- 1.3	45	281	24.9
600	27	4,302	- 5.4	48	275	32.1
550	27	4,971	- 9.6	37	276	35.0
500	27	5,711	-14.3	37	272	35.9
450	27	6,493	-19.6		274	39.6
400	27	7,367	-26.0		277	45.1
350	27	8,320	-33.0		276	42.0
300	27	9,386	-41.3		274	44.9
250	27	10,602	-49.6		273	50.3
200	27	12,042	-54.4		272	51.3
175	27	12,899	-53.7		269	52.8
150	27	13,891	-53.7		273	43.3
125	27	15,059	-55.3		279	26.2
100	27	16,477	-56.7		274	14.6
80	27	17,894	-56.1		295	3.5
60	26	19,733	-54.2		78	7.0
50	26	20,907	-52.4		80	9.7
40	26	22,356	-50.6		79	12.2
30	25	24,241	-48.8		87	14.8
25	25	25,442	-47.5		89	15.9
20	25	26,923	-45.5		89	16.1
15	22	28,849	-41.6		88	17.1
10	8	31,590	-38.7			
7						
5						

BOISE, IDAHO (916 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	868	12.8	54	175	3.5
1,000	30	120				
950	30	559				
900	30	1,018	15.3	43	282	1.6
850	30	1,504	15.8	32	319	6.6
800	30	2,016	12.4	32	311	8.9
750	30	2,552	8.8	34	295	9.9
700	30	3,122	5.0	34	286	13.4
650	30	3,727	.9	39	270	16.3
600	30	4,362	- 3.4	40	263	20.4
550	30	5,040	- 8.1	41	259	24.1
500	30	5,779	-12.9	38	258	27.4
450	30	6,572	-18.6	37	259	26.8
400	30	7,444	-24.9		259	30.5
350	30	8,401	-32.1		259	31.3
300	30	9,471	-40.3		261	34.8
250	30	10,691	-49.4		260	37.7
200	30	12,129	-55.8		261	40.2
175	30	12,978	-56.4		265	38.3
150	30	13,956	-57.0		263	31.3
125	30	15,107	-58.3		267	24.9
100	30	16,506	-60.0		268	15.5
80	30	17,905	-58.4		279	6.0
60	30	19,724	-55.6		77	2.7
50	30	20,891	-53.9		73	5.6
40	29	22,326	-52.1		77	9.1
30	29	24,198	-49.7		80	12.4
25	26	25,390	-48.3		81	16.1
20	24	26,868	-46.4		84	17.1
15	15	28,784	-43.3		82	16.7
10	7	31,568	-38.6			

BROWNSVILLE, TEX. (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	7	23.8	94	150	3.5
1,000	30	111	24.6	89	155	8.5
950	30	556	22.4	84	167	18.1
900	30	1,032	20.4	69	167	18.3
850	30	1,525	18.8	52	159	12.4
800	30	2,044	16.3	47	136	5.6
750	30	2,585	13.3	42	117	5.1
700	30	3,168	10.0	39	73	5.2
650	30	3,772	6.1	39	52	5.8
600	30	4,432	2.2	37	42	7.4
550	30	5,120	- 2.1	31	28	6.0
500	30	5,881	- 6.6		16	6.4
450	30	6,695	-11.5		28	7.0
400	30	7,591	-17.7		10	7.2
350	30	8,577	-24.6		348	9.5
300	30	9,681	-33.1		329	12.6
250	30	10,938	-42.8		319	14.0
200	30	12,410	-53.3		301	16.1
175	30	13,258	-59.3		291	14.8
150	29	14,208	-65.5		296	15.0
125	29	15,301	-71.1		312	9.9
100	29	16,611	-74.0		356	6.8
80	28	17,915	-71.9		74	16.7
60	28	19,647	-63.5		88	26.4
50	28	20,778	-59.5		90	27.8
40	24	22,185	-56.1		89	33.6
30	24	24,037	-51.1		87	37.7
25	22	25,228	-49.0		85	39.6
20	21	26,694	-46.3		85	40.8
15	16	28,603	-42.8		82	42.0
10	7	31,338	-38.4			

BUFFALO, N. Y. (993 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	182	14.6	82	201	3.3
1,000	29	118				
950	29	551	15.3	67	245	5.6
900	29	1,011	12.7	65	257	11.5
850	29	1,489	10.0	64	269	14.0
800	29	1,991	7.5	57	270	19.8
750	29	2,517	5.5	46	275	17.9
700	29	3,082	2.7	40	279	19.6
650	29	3,674	- .6	39	281	22.0
600	29	4,314	- 4.5	41	281	21.8
550	29	4,992	- 8.5	39	281	24.5
500	29	5,727	-12.9		280	28.6
450	29	6,516	-18.4	34	273	33.8
400	29	7,392	-24.6		277	36.3
350	29	8,351	-31.5		277	38.5
300	29	9,424	-39.8		278	44.5
250	28	10,648	-48.9		276	52.3
200	28	12,089	-55.7		280	57.5
175	27	12,942	-56.7		286	51.5
150	26	13,921	-55.8		282	34.8
125	25	15,077	-57.0		275	26.2
100	25	16,484	-58.6		278	17.9
80	25	17,889	-57.4		280	10.3
60	24	19,717	-54.5		15	1.2
50	24	20,890	-52.7		91	6.4
40	21	22,336	-50.8		94	8.2
30	18	24,216	-48.9		91	12.2
25	16	25,418	-47.0		93	15.3
20	13	26,896	-44.7		84	16.1
15	9	28,843	-40.3			
10						

BURRWOOD, LA. (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	3	25.4	84	213	0.8
1,000	30	128	25.1	81	172	1.6
950	30	579	21.9	78	156	2.1
900	30	1,046	18.9	70	163	3.1
850	30	1,536	16.3	59	142	2.9
800	30	2,050	13.7	55	136	1.9
750	30	2,590	11.1	47	131	1.0
700	30	3,165	8.1	41	29	1.0
650	30	3,769	4.9	34	337	2.7
600	30	4,422	.9	33	354	4.7
550	30	5,108	- 3.1	28	344	6.0
500	30	5,865	- 7.5		1	8.2
450	30	6,673	-12.6		356	8.7
400	30	7,568	-18.5		346	9.5
350	30	8,551	-25.2		338	11.9
300	30	9,653	-33.5		328	12.8
250	30	10,906	-43.4		322	15.2
200	30	12,373	-53.9		321	22.5
175	30	13,221	-58.8		318	25.6
150	30	14,179	-63.5		323	23.7
125	30	15,287	-67.8		320	20.0
100	30	16,622	-69.8		341	9.3
80	30	17,951	-68.3		39	9.7
60	30	19,703	-61.5		84	21.0
50	30	20,843	-57.7		90	23.5
40	30	22,265	-53.3		96	25.8
30	29	24,133	-49.7		89	27.0
25	28	25,331	-47.8		89	29.1
20	27	26,811	-45.1		87	33.2
15	23	28,749	-41.5		86	36.3
10	5	31,539	-36.3			

CAPE HATTERAS, N. C. (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	4	22.4	88	224	1.2
1,000	29	131	22.1	84	240	2.1
950	29	571	20.1	75	303	2.5
900	29	1,042	17.2	71	286	3.7
850	29	1,528	14.1	72	272	5.8
800	29	2,038	11.5	65	265	8.4
750	29	2,572	9.1	55	265	11.1
700	29	3,146	6.2	49	262	11.3
650	29	3,742	3.0	49	263	11.5
600	29	4,394	- .8	49	258	12.4
550	29	5,072	- 4.8		261	12.8
500	29	5,828	- 9.2		262	14.4
450	29	6,632	-14.1	38	265	16.5
400	29	7,523	-20.2		269	18.7
350	29	8,499	-27.1		268	20.4
300	29	9,592	-35.2		272	22.9
250	29	10,831	-44.8		269	27.6
200	29	12,289	-55.4		277	30.3
175	29	13,132	-59.8		277	29.7
150	29	14,089	-62.3		280	23.7
125	29	15,210	-64.2		282	18.7
100	29	16,577	-64.0		282	11.9
80	29	17,948	-62.6		335	2.1
60	29	19,741	-58.0		71	8.5
50	29	20,899	-55.2		81	13.4
40	28	22,340	-51.3		90	17.1
30	28	24,226	-48.1		95	17.3
25	27	25,434	-46.6		93	15.3
20	26	26,925	-44.7		82	14.6
15	22	28,866	-41.6		83	16.9
10	11	31,652	-36.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JUNE 1960

CARIBOU, ME. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	191	13.4	86	225	3.3
1,000	30	109				
950	30	537	12.6	74	238	6.0
900	30	994	10.6	70	268	9.1
850	30	1,469	7.8	70	273	11.1
800	30	1,967	4.8	67	269	14.0
750	30	2,493	2.3	58	268	17.5
700	30	3,047	- .8	53	263	18.8
650	30	3,633	- 3.7	49	264	18.3
600	30	4,266	- 7.2	50	263	21.4
550	30	4,932	-11.3	43	263	24.7
500	30	5,665	-15.9		260	27.8
450	30	6,449	-21.2		260	31.5
400	30	7,312	-27.6		258	32.8
350	30	8,259	-34.6		255	35.0
300	30	9,320	-42.1		260	37.3
250	30	10,536	-48.3		259	39.8
200	29	11,992	-52.3		258	39.6
175	29	12,855	-52.6		260	35.4
150	29	13,851	-52.6		261	29.7
125	29	15,028	-53.4		268	24.3
100	28	16,464	-54.7		263	16.1
80	28	17,894	-53.6		271	8.5
60	28	19,753	-51.4		18	1.7
50	28	20,941	-50.0		94	8.2
40	28	22,402	-48.9		94	10.3
30	26	24,297	-47.3		92	12.2
25	21	25,500	-46.1		93	15.0
20	19	26,990	-43.6		89	17.1
15	10	28,902	-38.8			
10	7	31,717	-32.8			
7						
5						

CHARLESTON, S. C. (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	13	22.0	90	295	1.7
1,000	30	145	21.8	85	279	3.3
950	30	588	20.8	74	278	5.6
900	30	1,057	18.2	71	288	4.3
850	30	1,546	15.6	67	320	1.7
800	30	2,058	12.4	67	247	1.9
750	30	2,592	9.6	60	254	3.7
700	30	3,168	6.5	58	263	5.1
650	30	3,766	3.4	53	267	6.0
600	30	4,419	- .1	48	269	6.0
550	30	5,101	- 4.2	48	270	7.4
500	30	5,857	- 8.6	43	270	7.0
450	30	6,656	-13.8	35	271	8.4
400	30	7,553	-19.7		278	11.3
350	29	8,531	-26.7		274	13.8
300	29	9,625	-35.3		274	16.5
250	29	10,869	-44.9		282	15.9
200	29	12,325	-56.2		295	16.7
175	28	13,161	-60.9		287	18.7
150	28	14,113	-64.0		295	17.1
125	28	15,226	-55.4		297	12.6
100	28	16,582	-65.9		297	6.8
80	27	17,940	-64.2		27	4.5
60	27	19,718	-59.6		75	12.4
50	27	20,867	-56.4		87	16.7
40	26	22,298	-52.0		92	18.5
30	26	24,175	-48.6		92	18.1
25	26	25,378	-47.3		92	18.3
20	25	26,862	-45.2		90	18.3
15	24	28,797	-42.4		84	20.2
10	17	31,559	-36.6		87	23.5
7	9	34,048	-32.9			
5						

COLD BAY, ALASKA (1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	27	5.4	89	238	2.5
1,000	30	114	4.8	87	224	2.3
950	30	529	2.5	86	186	2.1
900	30	966	.5	82	107	1.4
850	30	1,425	- .1	71	111	1.0
800	30	1,910	- 2.0	65	287	.8
750	30	2,417	- 4.3	59	276	2.9
700	30	2,963	- 7.1	56	286	4.7
650	30	3,530	-10.2	51	271	6.4
600	30	4,152	-13.4	45	255	7.4
550	30	4,807	-17.4	41	255	7.6
500	30	5,519	-22.2	39	263	8.5
450	30	6,278	-27.7	37	270	8.7
400	30	7,123	-33.8	34	282	11.9
350	30	8,046	-40.3		277	10.1
300	30	9,082	-47.3		278	11.1
250	30	10,273	-52.3		264	16.7
200	30	11,724	-49.6		252	15.7
175	30	12,602	-48.0		249	13.8
150	29	13,620	-48.0		247	12.0
125	29	14,823	-47.8		237	10.3
100	29	16,295	-48.1		219	7.2
80	29	17,768	-47.9		200	4.9
60	29	19,668	-48.0		151	4.1
50	29	20,871	-48.0		131	4.7
40	29	22,343	-48.1		101	8.2
30	28	24,240	-47.5		98	12.4
25	28	25,448	-46.7		96	14.2
20	26	26,923	-45.8		89	18.1
15	20	28,850	-43.2		91	19.4
10	19	31,605	-39.8		99	22.3
7	13	34,036	-37.8			
5	8	36,334	-36.8			

COLUMBIA, MO. (986 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	238	17.6	87	107	0.8
1,000	30	113				
950	30	555	19.3	73	225	4.5
900	30	1,020	17.4	68	263	8.7
850	30	1,507	14.8	65	276	8.0
800	30	2,018	12.4	61	266	11.3
750	30	2,557	9.7	56	260	11.7
700	30	3,128	6.6	56	269	15.2
650	30	3,729	2.9	54	270	17.9
600	30	4,377	- 1.1	45	271	20.4
550	30	5,059	- 5.5	45	274	20.6
500	30	5,808	-10.0	44	277	22.0
450	30	6,604	-15.3	40	278	23.1
400	30	7,494	-21.2	37	285	24.9
350	30	8,466	-28.3		288	28.2
300	30	9,553	-36.4		288	33.0
250	30	10,792	-45.9		290	42.7
200	30	12,244	-56.1		289	49.9
175	30	13,085	-59.6		289	46.0
150	30	14,046	-61.0		286	37.7
125	30	15,172	-63.2		284	27.6
100	30	16,542	-63.6		291	17.7
80	30	17,916	-62.1		333	4.9
60	30	19,710	-57.8		68	7.2
50	30	20,867	-55.0		79	11.1
40	29	22,300	-52.5		92	13.4
30	27	24,171	-49.9		90	15.3
25	27	25,367	-48.3		83	14.6
20	24	26,845	-45.8		82	16.9
15	18	28,774	-42.5		88	18.8
10	7	31,555	-37.9			
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5						

DAYTON, OHIO (981 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	297	16.2	79	127	0.8
1,000	30	133				
950	30	573	17.7	66	210	3.5
900	30	1,032	15.2	62	255	8.0
850	30	1,515	12.7	63	261	11.9
800	30	2,022	10.6	50	265	12.8
750	30	2,559	8.0	49	261	14.0
700	30	3,125	5.1	48	266	14.6
650	30	3,726	1.7	47	272	15.7
600	30	4,368	- 2.1	47	273	20.0
550	30	5,050	- 5.9	42	274	22.5
500	30	5,795	-10.4	37	274	24.9
450	30	6,596	-15.7		277	26.6
400	29	7,477	-22.2		279	29.0
350	29	8,445	-29.1		282	32.8
300	29	9,529	-37.4		279	36.5
250	29	10,763	-46.6		281	45.7
200	29	12,213	-55.6		284	50.5
175	29	13,058	-58.2		286	47.8
150	29	14,025	-59.6		284	36.5
125	28	15,160	-61.2		285	26.2
100	28	16,544	-61.4		289	14.8
80	28	17,932	-60.2		306	6.6
60	28	19,745	-56.2		54	5.1
50	28	20,911	-54.1		70	7.2
40	27	22,352	-51.6		84	10.9
30	27	24,234	-48.7		86	14.2
25	25	25,438	-47.2		85	14.6
20	25	26,925	-44.8		83	15.0
15	18	28,863	-41.3		83	15.2
10	5	31,563	-38.5			
7						
5						

DENVER, COLO. (839 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,611	12.2	73	198	2.3
1,000	30	105				
950	30	544				
900	30	1,009				
850	30	1,499				
800	30	2,012	15.6	54	276	2.7
750	30	2,558	13.4	47	298	4.9
700	30	3,136	9.8	47	284	8.4
650	30	3,746	5.4	46	291	12.2
600	30	4,396	.3	45	291	15.7
550	30	5,081	- 5.1	41	286	17.7
500	30	5,829	-10.3	36	279	23.3
450	30	6,631	-15.8	32	277	26.2
400	30	7,511	-22.1	31	275	27.4
350	30	8,480	-29.2		274	32.1
300	30	9,563	-37.6		271	39.4
250	30	10,797	-46.9		266	42.0
200	30	12,246	-55.6		265	45.5
175	30	13,090	-58.9		266	46.2
150	30	14,054	-60.5		266	41.2
125	29	15,185	-62.9		268	32.1
100	29	16,559	-63.2		268	19.8
80	29	17,936	-61.6		264	7.4
60	29	19,733	-58.5		80	2.3
50	29	20,885	-56.5		92	5.8
40	29	22,310	-54.1		85	8.5
30	27	24,168	-51.2		90	13.8
25	27	25,357	-49.9		84	13.2
20	25	26,822	-48.3		85	13.4
15	20	28,724	-45.6		84	15.0
10	12	31,471	-41.1		86	17.5
7	5	33,875	-39.9			

DODGE CITY, KANS. (923 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	792	17.1	80	118	2.1
1,000	30	102				
950	30	545				
900	30	1,011	18.7	68	189	3.7
850	30	1,502	18.6	58	244	12.0
800	30	2,022	17.1	49	256	15.0
750	30	2,567	13.9	46	269	13.4
700	30	3,148	9.9	46	274	13.2
650	30	3,756	5.6	46	275	13.2
600	30	4,409	.6	49	278	15.7
550	30	5,093	- 4.3	47	276	16.9
500	30	5,846	- 9.5	41	280	17.5
450	30	6,646	-15.0		283	19.8
400	30	7,534	-21.1		283	24.9
350	30	8,506	-28.3		282	29.1
300	30	9,593	-36.6		274	31.7
250	29	10,836	-46.0		268	36.9
200	29	12,288	-55.8		271	40.6
175	29	13,132	-59.2		274	40.4
150	29	14,092	-62.5		276	32.6
125	29	15,212	-64.6		277	26.8
100	29	16,570	-65.3		280	14.2
80	28	17,933	-62.8		286	3.1
60	28	19,725	-58.2		82	7.8
50	27	20,883	-55.4		84	12.0
40	27	22,315	-52.9		85	13.6
30	24	24,185	-50.2		86	15.3
25	19	25,381	-48.1		85	15.7
20	17	26,866	-45.1		90	15.0
15	14	28,782	-42.1		87	16.9
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7						

EL PASO, TEX. (880 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,197	23.0	39	2	1.6
1,000	30	65				
950	30	514				
900	30	999				
850	30	1,501	24.1	34	115	2.5
800	30	2,029	21.6	31	160	4.9
750	30	2,578	18.0	31	205	3.1
700	30	3,170	13.3	34	295	4.3
650	30	3,779	8.0	39	306	4.7
600	30	4,441	2.3	45	283	4.1
550	30	5,127	- 3.6	49	244	5.8
500	30	5,883	- 9.2	45	247	9.5
450	30	6,687	-14.1		240	10.1
400	30	7,575	-20.0		234	13.4
350	30	8,552	-27.3		239	17.1
300	30	9,643	-35.8		243	22.9
250	30	10,885	-45.0		247	29.5
200	30	12,346	-54.2		249	30.3
175	30	13,193	-59.1		247	27.4
150	30	14,150	-63.6		248	26.4
125	30	15,256	-68.1		251	23.1
100	30	16,587	-70.3		260	11.7
80	30	17,917	-67.9		87	4.9
60	30	19,675	-61.1		87	14.4
50	30	20,816	-57.2		85	18.5
40	30	22,239	-53.5		86	22.5
30	29	24,103	-50.2		85	22.2
25	29	25,298	-48.2		86	23.1
20	25	26,775	-45.9		81	23.9
15	17	28,720	-42.7		79	25.8
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ELY, NEV. (810 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,908	8.0	42	182	6.2
1,000	30	122				
950	30	560				
900	30	1,021				
850	30	1,507				
800	30	2,015	13.9	34	171	3.5
750	30	2,557	13.5	28	145	.8
700	30	3,137	9.5	30	267	4.5
650	30	3,739	5.1	32	255	10.1
600	30	4,395	- .3	36	239	13.6
550	30	5,078	- 5.6	40	240	16.9
500	30	5,827	-10.7	36	251	20.6
450	30	6,620	-16.5		256	22.7
400	30	7,504	-23.2		255	25.3
350	30	8,469	-30.2		259	25.6
300	30	9,548	-38.8		255	30.5
250	30	10,774	-48.5		254	25.6
200	30	12,216	-56.7		264	21.6
175	30	13,057	-59.6		260	21.6
150	30	14,019	-60.9		259	17.5
125	30	15,150	-61.9		260	16.1
100	30	16,528	-62.8		259	10.9
80	30	17,903	-61.4		282	2.3
60	30	19,702	-57.4		85	5.4
50	30	20,858	-55.5		83	9.3
40	29	22,288	-53.3		76	9.9
30	28	24,152	-50.3		75	12.6
25	28	25,347	-48.1		79	15.3
20	28	26,825	-45.6		84	17.3
15	28	28,759	-41.3		89	15.9
10	15	31,510	-36.7		85	11.7
7						

FAIRBANKS, ALASKA (996 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	135	8.9	79	347	1.4
1,000	30	100			341	1.6
950	30	529	10.4	54	256	4.7
900	30	976	7.5	54	258	5.2
850	30	1,444	3.9	59	244	5.2
800	30	1,934	.1	65	227	5.8
750	30	2,445	- 3.7	68	223	5.2
700	30	2,988	- 7.5	69	218	6.0
650	30	3,557	-10.9	63	213	5.8
600	30	4,172	-14.9	58	206	6.2
550	30	4,823	-19.1	49	211	7.0
500	30	5,528	-23.9	42	201	8.7
450	30	6,282	-29.5	40	199	9.3
400	30	7,117	-36.0	42	194	10.1
350	30	8,031	-42.7		194	11.5
300	30	9,056	-49.9		205	12.2
250	30	10,236	-52.7		216	12.4
200	30	11,694	-47.5		204	8.7
175	30	12,580	-46.1		200	7.2
150	30	13,606	-45.9		197	6.4
125	30	14,821	-45.7		181	5.1
100	30	16,308	-45.5		174	5.4
80	30	17,796	-45.1		150	5.2
60	29	19,717	-44.7		128	6.4
50	29	20,937	-44.5		117	7.0
40	29	22,432	-44.2		107	9.5
30	26	24,365	-43.2		101	11.7
25	26	25,595	-42.1		97	15.0
20	24	27,104	-40.3		95	17.5
15	17	29,072	-37.9		92	19.6
10						
7						

FLINT, MICH. (987 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	234	14.4	83	196	2.1
1,000	30	126				
950	30	561	15.5	65	240	4.9
900	30	1,020	13.3	62	263	8.2
850	30	1,499	10.8	59	261	11.5
800	30	2,003	8.5	53	264	12.6
750	30	2,527	5.9	48	264	14.4
700	30	3,097	3.0	46	264	16.7
650	30	3,689	- .4	46	271	20.4
600	30	4,330	- 4.1	43	276	23.1
550	30	5,004	- 7.9	39	275	28.6
500	30	5,747	-12.5		274	29.7
450	30	6,534	-17.8		275	32.1
400	30	7,416	-23.9		279	36.5
350	30	8,376	-31.1		283	38.9
300	30	9,451	-39.5		279	43.5
250	30	10,675	-48.3		278	52.3
200	30	12,118	-55.3		283	55.0
175	30	12,968	-56.3		284	50.3
150	30	13,948	-56.4		285	45.7
125	30	15,101	-58.0		283	30.7
100	30	16,505	-58.8		285	20.8
80	30	17,908	-57.8		313	10.7
60	30	19,733	-55.0		25	4.1
50	30	20,903	-53.1		75	6.4
40	30	22,347	-51.2		69	10.3
30	28	24,225	-48.9		88	11.1
25	26	25,428	-47.4		91	11.9
20	23	26,913	-45.1		87	11.7
15	18	28,840	-41.8		83	13.6
10	8	31,599	-36.7			
7						
5						

FORT WORTH, TEX. (992 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	180	22.8	77	166	3.3
1,000	30	112				
950	30	566	23.0	66	188	14.2
900	30	1,034	22.1	56	199	14.4
850	30	1,528	19.7	50	207	11.5
800	30	2,048	16.8	46	227	7.2
750	29	2,594	13.4	47	262	3.9
700	29	3,173	9.4	47	305	4.1
650	29	3,780	5.2	45	342	5.8
600	28	4,432	.8	42	351	8.5
550	29	5,122	- 3.6	40	349	8.7
500	29	5,872	- 7.9		324	9.1
450	29	6,682	-13.1		321	10.5
400	29	7,571	-19.4		306	12.4
350	29	8,550	-26.5		298	13.8
300	29	9,644	-35.1		292	15.3
250	29	10,890	-44.7		283	21.6
200	28	12,353	-54.8		280	29.7
175	28	13,197	-59.8		284	29.3
150	28	14,152	-63.8		287	26.8
125	28	15,260	-67.6		289	21.2
100	27	16,594	-69.8		290	11.3
80	27	17,930	-66.9		33	3.3
60	27	19,697	-60.4		88	13.4
50	27	20,844	-56.8		92	17.1
40	26	22,269	-53.6		92	19.0
30	26	24,133	-50.5		90	21.2
25	25	25,326	-48.6		87	20.4
20	24	26,803	-45.7		85	20.6
15	19	28,737	-42.2		81	19.4
10	6	31,531	-37.4			
7						
5						

GLASGOW, MONT. (933 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	696	10.8	74	355	1.2
1,000	29	106				
950	29	535				
900	29	995	12.9	55	318	3.7
850	29	1,473	10.7	50	305	8.4
800	29	1,976	7.8	50	289	10.9
750	29	2,502	4.3	54	283	13.6
700	29	3,064	.5	58	283	17.7
650	29	3,650	- 3.3	61	281	22.5
600	29	4,286	- 6.9	56	277	28.8
550	29	4,952	-11.0	53	276	31.7
500	29	5,686	-15.5	48	276	36.5
450	29	6,463	-20.7	41	277	39.6
400	29	7,335	-26.9	36	278	45.1
350	29	8,285	-33.7	36	279	47.0
300	29	9,349	-41.4		278	50.7
250	29	10,563	-50.0		279	53.2
200	29	12,001	-54.4		275	50.9
175	29	12,860	-52.9		277	47.0
150	29	13,856	-52.7		278	37.7
125	29	15,029	-54.3		276	29.0
100	28	16,458	-55.6		267	17.9
80	28	17,881	-54.7		274	6.4
60	26	19,728	-52.9		80	1.9
50	26	20,909	-51.4		87	5.6
40	25	22,362	-49.7		81	9.7
30	24	24,248	-48.0		95	12.8
25	24	25,454	-46.7		88	14.0
20	23	26,936	-44.8		87	16.3
15	21	28,868	-41.7		87	18.8
10	17	31,635	-37.1		87	20.4
7	12	34,150	-33.6		91	21.6
5	5	36,499	-30.7			

GRAND JUNCTION, COLO. (852 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,474	17.2	31	123	7.8
1,000	30	72				
950	30	517				
900	30	996				
850	30	1,490			123	6.8
800	30	2,010	18.5	26	139	6.0
750	30	2,555	15.1	27	244	4.5
700	30	3,139	10.7	30	260	8.9
650	30	3,747	5.8	34	265	13.6
600	30	4,399	.5	37	261	17.3
550	30	5,082	- 5.1	42	258	19.0
500	30	5,832	-10.5	37	261	23.5
450	30	6,632	-16.0	33	262	26.8
400	30	7,511	-22.2		260	31.3
350	30	8,478	-29.7		260	32.8
300	30	9,559	-38.0		263	36.3
250	30	10,789	-47.4		258	35.8
200	30	12,235	-56.1		262	35.2
175	30	13,079	-58.6		255	30.7
150	30	14,043	-60.7		261	28.8
125	30	15,171	-63.0		260	23.9
100	30	16,539	-64.1		257	13.0
80	30	17,912	-61.4		256	1.4
60	30	19,713	-57.6		89	9.1
50	30	20,871	-55.7		75	15.2
40	28	22,299	-53.0		81	18.8
30	26	24,166	-50.0		80	19.6
25	25	25,362	-48.2		82	17.7
20	22	26,840	-46.1		77	19.2
15	14	28,781	-42.2		79	21.0
10	6	31,541	-37.3			
7						
5						

GREAT FALLS, MONT. (887 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,123	11.5	57	238	4.5
1,000	30	103				
950	30	537				
900	30	1,000				
850	30	1,480	12.4	47	244	13.8
800	30	1,986	9.2	48	271	11.9
750	30	2,510	5.3	52	280	11.7
700	30	3,078	1.7	50	280	15.7
650	30	3,666	- 1.9	51	277	21.0
600	30	4,305	- 5.9	47	272	24.7
550	30	4,971	-10.3	44	271	26.8
500	30	5,709	-15.0	38	269	33.2
450	30	6,488	-20.4	38	267	35.9
400	30	7,360	-26.7		271	37.5
350	30	8,311	-33.8		269	39.1
300	30	9,375	-41.9		272	41.2
250	30	10,587	-50.6		267	43.1
200	29	12,024	-55.1		271	43.1
175	29	12,878	-54.5		272	40.8
150	29	13,867	-53.8		269	34.0
125	29	15,038	-54.3		270	28.0
100	29	16,464	-55.6		271	16.9
80	29	17,885	-55.3		264	6.6
60	28	19,727	-53.5		49	2.7
50	27	20,901	-52.4		81	7.2
40	24	22,348	-50.6		83	11.1
30	23	24,232	-48.7		85	14.8
25	23	25,434	-47.2		81	15.2
20	23	26,919	-44.7		87	19.8
15	21	28,869	-40.4		89	19.2
10	7	31,618	-37.1			
7						
5						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JUNE 1960

GREEN BAY, WIS. (989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	210	12.1	86	327	1.6
1,000	30	118				
950	30	550	14.0	65	323	2.7
900	30	1,005	12.2	62	318	3.9
850	30	1,482	9.2	62	294	6.0
800	30	1,982	6.2	54	284	8.5
750	30	2,506	4.4	40	278	12.6
700	30	3,069	1.9	37	285	15.9
650	30	3,661	- 1.0	36	281	19.4
600	30	4,299	- 4.7	35	287	22.3
550	30	4,971	- 8.8	37	284	26.2
500	30	5,711	-13.5		280	29.3
450	30	6,497	-18.9		280	33.2
400	30	7,373	-24.9		281	37.3
350	30	8,330	-31.9		283	41.6
300	30	9,401	-39.9		281	43.9
250	30	10,624	-48.3		283	54.6
200	30	12,070	-54.8		279	60.2
175	30	12,922	-55.4		282	55.8
150	30	13,905	-55.4		281	41.8
125	30	15,065	-56.8		283	29.3
100	30	16,476	-57.7		285	20.0
80	30	17,884	-57.0		302	13.2
60	29	19,716	-54.5		11	4.3
50	28	20,886	-53.2		68	7.0
40	27	22,328	-51.2		74	10.1
30	25	24,209	-49.1		83	12.8
25	23	25,420	-47.5		82	14.2
20	22	26,901	-45.3		82	18.1
15	13	28,855	-40.3		83	21.2
10						

GREENSBORO, N. C. (985 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	273	19.2	89	327	0.6
1,000	30	146				
950	30	592	19.9	71	282	3.5
900	30	1,055	17.6	68	271	5.2
850	30	1,542	14.6	70	274	6.8
800	30	2,052	11.9	67	268	8.9
750	30	2,593	9.0	57	262	8.5
700	30	3,160	6.3	48	265	8.4
650	30	3,764	3.1	43	275	10.9
600	30	4,409	- .5	44	277	12.8
550	30	5,096	- 4.4	40	283	12.2
500	29	5,847	- 8.9		283	14.6
450	29	6,654	-13.9		284	16.3
400	29	7,541	-20.3		288	18.1
350	29	8,517	-27.5		287	21.2
300	29	9,608	-35.8		283	23.9
250	29	10,850	-45.5		289	29.0
200	26	12,296	-56.2		299	33.4
175	26	13,136	-60.0		294	33.2
150	26	14,093	-62.6		291	26.0
125	25	15,212	-63.9		291	19.4
100	25	16,577	-64.3		295	13.4
80	24	17,951	-62.8		310	5.1
60	22	19,740	-57.9		56	7.2
50	21	20,892	-55.6		83	11.9
40	21	22,323	-52.8		87	15.0
30	21	24,190	-50.1		91	14.6
25	21	25,385	-48.7		89	14.8
20	19	26,855	-47.1		87	14.4
15	17	28,771	-44.4		77	15.3
10	12	31,493	-40.7			

HILO, HAWAII (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	11	20.6	88	239	6.0
1,000	30	147	22.3	79	244	3.3
950	30	592	19.4	81	87	4.7
900	30	1,057	16.3	84	81	6.4
850	30	1,543	13.3	86	75	6.0
800	30	2,053	11.7	72	72	5.6
750	30	2,593	10.2	54	78	5.1
700	30	3,165	8.2	35	96	4.5
650	30	3,773	5.4	28	105	3.9
600	30	4,425	2.1	27	99	2.7
550	30	5,115	- 2.3	26	65	2.1
500	30	5,873	- 7.3	29	325	2.3
450	30	6,680	-12.7	31	288	5.2
400	30	7,576	-19.5	34	277	8.9
350	30	8,554	-26.8	34	267	12.4
300	30	9,647	-35.4		265	16.9
250	30	10,890	-45.5		263	23.9
200	30	12,343	-55.9		261	33.0
175	30	13,183	-61.1		257	30.7
150	30	14,129	-65.8		258	23.5
125	30	15,227	-69.2		264	15.9
100	30	16,550	-71.2			.0
80	29	17,876	-69.7		85	12.4
60	28	19,605	-64.8		89	23.5
50	27	20,726	-61.5		88	28.4
40	27	22,122	-57.7		80	34.2
30	26	23,953	-53.9		83	39.8
25	25	25,130	-51.3		84	42.0
20	22	26,588	-48.8		83	39.8
15	13	28,498	-46.4			
10						

INTERNAT. FALLS, MINN. (970 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	360	9.7	82	197	1.2
1,000	30	108				
950	30	542	12.8	71	208	4.9
900	30	991	11.6	60	240	7.8
850	30	1,466	8.4	59	259	7.4
800	30	1,965	5.5	57	271	8.9
750	30	2,489	2.3	53	272	10.9
700	30	3,045	- .8	51	276	13.8
650	30	3,631	- 3.9	44	279	15.2
600	30	4,262	- 7.4	37	280	18.5
550	30	4,929	-11.7	36	282	23.1
500	30	5,659	-16.3	36	287	25.5
450	30	6,439	-21.2		286	30.3
400	30	7,305	-27.3	37	284	36.3
350	30	8,253	-34.3		283	39.6
300	30	9,314	-41.8		280	44.3
250	30	10,530	-48.9		277	50.7
200	30	11,980	-52.3		273	50.9
175	30	12,844	-51.8		279	47.2
150	30	13,815	-51.7		279	38.7
125	30	15,025	-52.7		282	29.0
100	30	16,460	-54.2		286	20.8
80	30	17,892	-53.7		294	12.6
60	30	19,747	-51.9		359	3.7
50	30	20,932	-50.6		66	5.4
40	29	22,387	-49.4		79	9.3
30	28	24,280	-47.7		86	13.4
25	28	25,486	-46.5		88	14.8
20	26	26,986	-44.6		88	16.7
15	17	28,920	-41.6		87	16.1
10						

JACKASS FLATS, NEV. (889 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,100	20.7	20	28	5.4
1,000	30	63				
950	30	510				
900	30	991				
850	30	1,490	23.6	17	156	4.5
800	30	2,015	20.3	18	188	6.4
750	30	2,561	16.4	20	207	7.0
700	30	3,150	11.9	23	215	8.0
650	30	3,758	6.7	28	219	7.6
600	30	4,415	1.7	30	217	9.5
550	30	5,102	- 3.5		223	12.6
500	30	5,856	- 8.7		238	9.9
450	30	6,655	-14.4		238	14.4
400	30	7,547	-21.4		245	19.6
350	30	8,517	-28.9		251	22.9
300	30	9,600	-37.7		252	21.0
250	30	10,832	-47.3		248	26.2
200	30	12,280	-55.9		251	23.9
175	30	13,122	-59.2		253	25.3
150	30	14,085	-60.7		250	23.5
125	30	15,214	-62.9		254	19.0
100	30	16,581	-64.6		252	10.7
80	30	17,948	-63.2		256	1.9
60	29	19,736	-58.7		90	7.0
50	25	20,879	-56.3		85	10.1
40	22	22,300	-53.9		85	13.6
30	21	24,165	-50.7		82	14.6
25	18	25,353	-49.0		86	14.4
20	15	26,830	-46.8		90	15.0
15	11	28,744	-43.6			
10	5	31,479	-38.7			

JACKSON, MISS. (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	101	20.9	88	179	1.7
1,000	30	125	21.6	85	178	3.1
950	30	570	22.2	70	215	8.0
900	30	1,042	19.4	69	211	7.4
850	30	1,533	16.8	60	217	4.7
800	30	2,048	14.0	52	247	3.7
750	30	2,586	11.2	47	267	2.5
700	30	3,164	7.8	41	301	2.7
650	30	3,769	4.3	37	319	3.9
600	30	4,420	.5	34	324	4.9
550	30	5,106	- 3.8		331	6.2
500	29	5,858	- 8.2		325	7.2
450	29	6,663	-13.3		334	8.5
400	29	7,556	-19.2		333	11.7
350	29	8,537	-26.3		333	14.0
300	29	9,634	-34.6		324	16.9
250	29	10,884	-44.3		319	20.8
200	29	12,345	-54.9		315	24.3
175	29	13,191	-59.2		310	27.0
150	29	14,148	-63.0		313	24.9
125	29	15,261	-66.6		314	18.3
100	29	16,604	-67.7		315	11.3
80	29	17,947	-66.3		22	7.2
60	29	19,716	-60.0		80	15.5
50	29	20,864	-56.1		90	18.1
40	28	22,302	-52.6		89	18.1
30	26	24,158	-50.2		92	20.2
25	25	25,351	-48.4		89	22.9
20	23	26,835	-45.0		89	21.4
15	21	28,774	-41.5		85	20.2
10	10	31,560	-37.0			

JACKSONVILLE, FLA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	22.2	91	219	1.7
1,000	30	142	22.2	84	262	1.7
950	30	583	20.8	73	233	2.3
900	30	1,054	18.2	70	218	2.5
850	30	1,542	15.2	68	178	2.1
800	30	2,054	12.7	58	185	1.7
750	30	2,591	10.2	53	213	2.9
700	30	3,164	6.9	50	219	3.7
650	30	3,765	3.3	49	238	4.5
600	30	4,415	- .5	44	250	5.8
550	30	5,097	- 4.3	43	244	5.2
500	30	5,852	- 8.6	38	253	5.8
450	30	6,655	-13.6	33	261	7.0
400	30	7,548	-19.5		255	9.1
350	30	8,527	-26.3		263	9.5
300	30	9,623	-34.8		260	11.1
250	30	10,870	-44.8		277	9.7
200	29	12,323	-55.9		300	14.0
175	29	13,162	-60.9		303	14.4
150	29	14,113	-64.0		307	13.2
125	28	15,221	-66.5		321	11.5
100	28	16,567	-67.6		354	6.0
80	28	17,914	-66.1		52	6.2
60	28	19,681	-60.5		80	15.3
50	28	20,825	-56.8		86	21.4
40	27	22,253	-52.4		95	22.3
30	26	24,126	-49.8		97	22.0
25	25	25,320	-48.2		89	21.8
20	24	26,799	-45.5		86	24.9
15	19	28,733	-41.8		81	27.4
10						

JOHNSTON IS., PACIFIC AREA (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	3	26.0	77	71	13.8
1,000	30	127	25.0	77	77	15.7
950	30	579	21.8	79	85	17.3
900	30	1,046	18.8	76	88	19.6
850	30	1,536	16.0	73	88	17.5
800	30	2,050	13.7	62	89	14.4
750	30	2,589	11.4	44	82	12.8
700	30	3,167	8.9	35	79	9.5
650	30	3,770	5.6	36	83	6.6
600	30	4,428	1.8	31	101	3.1
550	30	5,117	- 2.3	30	113	.8
500	30	5,876	- 6.8		217	2.7
450	30	6,684	-11.9		244	3.5
400	30	7,583	-18.1		257	7.2
350	30	8,567	-25.1		242	10.7
300	30	9,670	-33.4		263	16.1
250	30	10,925	-43.3		266	25.8
200	29	12,391	-54.9		261	31.5
175	28	13,235	-60.9		265	29.5
150	28	14,182	-66.3		268	27.8
125	25	15,274	-71.0		267	17.9
100	24	16,589	-73.2		318	1.4
80	21	17,896	-70.8		81	13.8
60	18	19,616	-65.4		86	24.7
50	18	20,735	-61.8		87	29.9
40	18	22,131	-57.6		88	36.5
30	16	23,975	-52.9		92	45.5
25	15	25,162	-50.8		90	44.5
20	12	26,627	-47.7		90	51.9
15	5	28,487	-45.9			
10						

KING SALMON, ALASKA (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	15	6.5	86	154	3.7
1,000	30	108	6.8	81	181	4.9
950	30	529	6.2	70	169	4.3
900	30	972	3.6	69	126	1.9
850	30	1,434	.8	72	104	2.7
800	30	1,919	- 2.0	72	125	5.1
750	30	2,427	- 4.8	69	116	5.6
700	30	2,970	- 7.4	60	105	4.9
650	30	3,541	-10.4	55	112	4.9
600	30	4,157	-14.3	53	124	5.1
550	30	4,807	-18.6	49	111	2.5
500	30	5,516	-23.3	47	92	1.9
450	30	6,274	-28.9	45	63	1.0
400	30	7,113	-35.1	42	269	1.0
350	30	8,031	-41.7		259	2.1
300	30	9,061	-48.3		277	4.9
250	30	10,250	-51.7		272	9.1
200	30	11,709	-47.8		244	9.1
175	30	12,593	-46.3		234	8.0
150	30	13,618	-46.5		231	7.8
125	30	14,827	-46.8		217	7.0
100	29	16,307	-46.6		198	5.1
80	29	17,787	-46.6		169	5.8
60	29	19,695	-46.7		126	5.8
50	29	20,902	-46.9		119	7.2
40	29	22,381	-46.8		106	9.3
30	25	24,286	-46.4		95	12.2
25	19	25,480	-45.9		91	14.6
20	13	26,966	-44.7			
15	5	28,856	-42.4			
10						

KOTZEBUE, ALASKA (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	2.7	93	276	7.8
1,000	30	106	3.4	87	272	5.1
950	30	525	5.1	70	247	5.8
900	30	965	5.0	62	234	6.6
850	30	1,427	.5	63	227	7.0
800	30	1,911	- 2.1	60	213	6.6
750	30	2,421	- 5.2	55	225	6.8
700	30	2,961	- 8.2	51	218	7.4
650	30	3,528	-11.9	48	221	8.4
600	30	4,142	-15.9	48	228	9.3
550	30	4,791	-20.2	45	228	10.5
500	30	5,494	-25.1	41	233	11.1
450	30	6,246	-30.6	44	229	11.7
400	30	7,080	-36.8	42	229	11.5
350	30	7,991	-43.5		221	13.2
300	30	9,013	-49.7		210	15.3
250	30	10,202	-50.0		216	11.9
200	30	11,677	-45.4		208	8.2
175	30	12,569	-44.9		208	6.4
150	30	13,600	-44.8		194	5.2
125	30	14,819	-44.8		169	4.1
100	30	16,312	-44.7		157	5.4
80	30	17,804	-44.4		141	5.4
60	29	19,734	-44.0		124	6.8
50	28	20,953	-43.9		107	7.2
40	26	22,449	-43.7		99	8.5
30	26	24,384	-43.1		95	11.5
25	25	25,613	-41.8		95	12.0
20	24	27,136	-39.7		94	16.5
15	19	29,099	-37.4		86	16.5
10	11	31,922	-33.8			

LAKE CHARLES, LA. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	22.8	91	79	1.0
1,000	30	131	24.4	80	164	1.7
950	30	577	22.5	71	203	6.0
900	30	1,050	19.7	65	188	6.2
850	30	1,541	17.2	58	173	5.1
800	30	2,057	14.4	51	165	2.1
750	30	2,596	11.5	46	141	.8
700	30	3,175	8.1	43	348	1.7
650	30	3,779	4.5	40	350	3.9
600	30	4,431	.6	40	2	5.2
550	30	5,119	- 3.1	33	357	5.1
500	30	5,874	- 7.7		348	5.8
450	30	6,680	-12.8		350	9.3
400	30	7,576	-18.9		344	11.3
350	30	8,558	-25.9		335	11.1
300	30	9,657	-34.1		324	13.8
250	30	10,908	-43.9		316	17.7
200	30	12,372	-54.3		307	24.3
175	29	13,220	-59.6		304	27.4
150	29	14,174	-64.4		306	25.1
125	29	15,277	-68.4		317	15.0
100	29	16,608	-70.5		341	8.7
80	29	17,939	-68.0		50	9.5
60	29	19,699	-60.7		92	17.7
50	28	20,845	-57.0		92	21.0
40	28	22,273	-53.2		87	26.4
30	27	24,144	-49.2		93	25.5
25	27	25,345	-47.4		90	26.6
20	22	26,826	-44.9		88	26.0
15	21	28,771	-40.6		86	25.6
10	12	31,554	-35.1			
7	5	34,035	-31.0			

LANDER, WYO. (829 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,696	11.7	54	247	2.9
1,000	30	98				
950	30	537				
900	30	1,001				
850	30	1,490				
800	30	2,000	13.5	45	297	2.5
750	30	2,539	10.4	45	305	3.9
700	30	3,112	6.6	47	302	10.5
650	30	3,711	2.6	44	287	14.8
600	30	4,357	- 2.2	42	281	21.6
550	30	5,038	- 6.8	39	284	25.8
500	30	5,781	-12.0	39	274	28.6
450	30	6,572	-17.9	38	272	30.1
400	30	7,449	-24.4	34	273	33.4
350	30	8,407	-31.8		272	35.9
300	30	9,478	-40.0		269	41.4
250	30	10,699	-48.9		265	48.2
200	30	12,140	-56.0		270	47.8
175	30	12,986	-57.5		270	45.1
150	30	13,958	-58.4		270	41.6
125	29	15,104	-59.4		268	29.1
100	29	16,496	-60.4		269	15.3
80	29	17,887	-59.3		266	6.6
60	29	19,704	-55.8		95	4.5
50	29	20,868	-54.4		86	8.0
40	29	22,302	-52.6		90	10.7
30	27	24,171	-50.1		87	15.9
25	27	25,365	-48.4		88	15.9
20	27	26,842	-46.0		89	18.3
15	23	28,769	-41.8		80	18.1
10	10	31,536	-36.3			
7						

LAS VEGAS, NEV (934 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	660	24.9	17	200	5.1
1,000	30	49				
950	30	503				
900	30	985	27.6		236	8.2
850	30	1,488	24.9		258	7.6
800	30	2,015	21.0		240	7.2
750	30	2,566	16.6	20	223	8.5
700	30	3,150	11.9	21	215	8.7
650	30	3,761	6.9	25	210	8.4
600	30	4,416	1.6	29	221	8.4
550	30	5,099	- 4.0		227	11.3
500	30	5,854	- 9.2		228	12.0
450	30	6,655	-15.0		234	13.6
400	30	7,541	-21.6		243	10.1
350	30	8,511	-29.0		252	15.7
300	30	9,595	-37.6		251	17.3
250	30	10,828	-47.3		252	19.8
200	30	12,273	-56.2		248	25.1
175	30	13,116	-59.4		250	27.8
150	30	14,077	-61.1		249	26.6
125	30	15,201	-64.1		247	21.8
100	30	16,562	-66.1		248	11.3
80	30	17,918	-63.8		224	1.4
60	30	19,699	-59.1		92	8.5
50	30	20,849	-56.6		84	12.6
40	29	22,271	-53.5		83	15.0
30	29	24,131	-50.7		82	16.7
25	29	25,324	-48.8		87	17.1
20	27	26,800	-45.8		88	15.9
15	20	28,724	-42.2		89	15.3
10	8	31,446	-37.6			
7						

LIHUE, HAWAII (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	36	23.8	79	49	9.1
1,000	30	152	23.0	79	57	11.3
950	30	595	19.3	83	75	13.4
900	30	1,061	16.0	84	81	14.8
850	30	1,546	13.0	81	85	14.4
800	30	2,054	10.5	69	90	14.6
750	30	2,592	9.5	39	91	13.8
700	30	3,162	7.8		85	9.5
650	30	3,768	4.9		84	6.4
600	30	4,419	1.2		82	5.1
550	30	5,107	- 3.1		76	2.9
500	30	5,863	- 7.8	29	45	1.2
450	30	6,670	-13.5	35	334	2.5
400	30	7,561	-19.8	38	288	5.8
350	30	8,538	-27.0		290	8.4
300	30	9,631	-35.5		291	11.1
250	30	10,874	-45.4		284	16.7
200	29	12,325	-56.3		281	20.0
175	29	13,164	-61.2		280	19.8
150	28	14,110	-65.2		276	18.5
125	27	15,211	-68.2		282	13.6
100	25	16,546	-69.8		51	1.9
80	22	17,881	-68.9		96	11.5
60	22	19,615	-64.8		91	22.3
50	22	20,736	-61.5		94	28.4
40	22	22,130	-58.0		92	34.2
30	20	23,960	-53.9		93	39.8
25	19	25,138	-51.5		93	42.0
20	17	26,591	-49.6		91	45.1
15	14	28,489	-47.3		97	44.9
10	6	31,191	-45.2			
7						

LITTLE ROCK, ARK. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	79	20.8	87	234	1.0
1,000	29	123	21.1	85		.0
950	29	570	22.1	68	201	6.2
900	29	1,039	19.9	61	227	7.4
850	29	1,531	18.0	51	240	7.8
800	29	2,048	15.3	49	261	6.6
750	28	2,588	11.8	51	324	4.7
700	28	3,167	8.2	50	332	5.8
650	28	3,768	4.4	46	338	7.6
600	28	4,424	.2	44	327	10.5
550	28	5,106	- 3.7	41	319	10.5
500	28	5,864	- 8.2	35	311	12.8
450	28	6,669	-13.5		314	12.8
400	28	7,563	-19.4		303	13.4
350	28	8,540	-26.8		308	19.0
300	28	9,635	-35.0		307	19.8
250	28	10,881	-44.6		305	21.4
200	28	12,340	-55.3		304	29.7
175	28	13,183	-59.9		303	24.9
150	28	14,138	-63.2		311	20.2
125	26	15,258	-65.4		303	19.2
100	24	16,606	-66.5		301	15.2
80	24	17,962	-64.4		312	1.6
60	24	19,739	-58.9		66	12.0
50	23	20,889	-56.0		83	10.9
40	23	22,317	-52.9		86	10.9
30	23	24,183	-50.1		86	14.2
25	23	25,381	-48.0		92	16.9
20	22	26,854	-45.8		90	15.5
15	15	28,781	-43.0			
10						
7						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JUNE 1960

McGRATH, ALASKA
(1000 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	103	8.2	77	257	1.0
1,000--	30	105			275	1.4
950----	30	531	9.1	60	303	1.9
900----	30	977	6.0	62	298	1.4
850----	30	1,443	2.5	68	205	1.2
800----	30	1,930	- 1.1	73	211	3.9
750----	30	2,441	- 4.5	72	216	4.7
700----	30	2,982	- 7.8	68	204	5.2
650----	30	3,550	-11.6	63	186	4.1
600----	30	4,165	-15.2	57	184	3.5
550----	30	4,814	-19.3	51	208	4.1
500----	30	5,520	-24.1	52	193	4.7
450----	30	6,277	-29.5	50	208	4.9
400----	20	7,111	-35.8	49	233	4.9
350----	30	8,025	-42.6		228	5.1
300----	30	9,050	-50.0		212	7.0
250----	30	10,230	-52.5		196	3.7
200----	30	11,691	-47.3		218	2.9
175----	30	12,577	-46.1		204	2.9
150----	30	13,602	-46.0		187	3.1
125----	30	14,816	-45.9		181	2.7
100----	30	16,301	-45.8		168	3.1
80-----	30	17,788	-45.8		156	3.3
60-----	30	19,704	-45.8		133	5.2
50-----	27	20,917	-45.7		103	6.0
40-----	27	22,401	-45.6		110	8.2
30-----	20	24,316	-45.2		90	10.1
25-----	20	25,537	-44.0		91	12.2
20-----	14	27,025	-42.1			
15-----	5	28,945	-40.1			
10-----						
7------						

MEDFORD, OREG.
(971 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	401	11.7	75	230	0.6
1,000--	30	149				
950----	30	587	14.4	61	271	1.9
900----	30	1,040	14.0	56	317	2.5
850----	30	1,521	12.3	56	4	2.1
800----	30	2,028	10.9	40	17	4.5
750----	30	2,560	8.4	31	315	4.7
700----	30	3,131	5.0	35	281	8.5
650----	30	3,724	1.5		279	11.5
600----	30	4,372	- 2.6		280	15.5
550----	30	5,044	- 6.8		278	18.8
500----	30	5,794	-11.9		276	21.6
450----	30	6,585	-17.3		276	23.7
400----	30	7,465	-24.1		274	25.6
350----	30	8,426	-31.4		278	30.1
300----	30	9,499	-39.9		279	30.5
250----	30	10,719	-49.3		275	34.2
200----	30	12,155	-56.9		271	36.5
175----	30	12,999	-57.6		266	34.6
150----	30	13,971	-58.2		268	29.7
125----	30	15,117	-59.3		268	24.3
100----	30	16,513	-59.7		266	15.3
80-----	30	17,909	-59.0		273	6.0
60-----	29	19,723	-56.4		69	4.1
50-----	29	20,885	-54.8		81	7.6
40-----	29	22,318	-52.9		86	11.1
30-----	28	24,178	-50.8		85	13.8
25-----	27	25,368	-49.1		83	15.2
20-----	26	26,840	-46.8		79	16.1
15-----	25	28,758	-42.7		85	17.1
10-----	23	31,520	-36.9		86	18.5
7------	12	33,974	-33.9			

MIAMI, FLA.
(1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	4	25.0	87	91	1.9
1,000--	30	132	24.7	83	121	4.9
950----	30	580	21.9	82	146	7.6
900----	30	1,051	19.0	77	156	7.0
850----	30	1,542	16.4	69	171	6.0
800----	30	2,057	13.9	62	180	5.6
750----	30	2,594	10.9	56	185	6.2
700----	30	3,173	7.8	53	186	5.8
650----	30	3,776	4.5	47	196	5.4
600----	30	4,429	.7	43	211	4.9
550----	30	5,116	- 3.4	39	230	4.7
500----	30	5,871	- 8.2	37	248	3.9
450----	30	6,680	-13.2	36	267	4.5
400----	30	7,572	-19.0		279	4.5
350----	30	8,552	-26.0		281	5.6
300----	30	9,650	-34.4		268	7.4
250----	30	10,899	-44.4		271	10.9
200----	30	12,358	-55.7		286	14.2
175----	30	13,198	-60.9		296	14.2
150----	30	14,146	-65.4		303	15.3
125----	27	15,243	-69.0		325	13.6
100----	27	16,571	-70.7		23	8.2
80-----	27	17,898	-69.4		68	8.4
60-----	27	19,640	-62.9		81	19.6
50-----	26	20,777	-58.5		91	26.8
40-----	26	22,192	-54.8		98	31.7
30-----	25	24,056	-49.7		96	30.5
25-----	24	25,254	-47.6		93	29.9
20-----	22	26,727	-46.2		87	33.6
15-----	10	28,656	-42.7		84	34.8
10-----						
7------						

MIDLAND, TEX.
(914 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	871	20.8	65	127	3.7
1,000--	30	87				
950----	30	538				
900----	30	1,011	21.3	61	157	9.5
850----	30	1,507	21.4	52	182	15.3
800----	30	2,032	19.5	42	186	9.3
750----	30	2,581	16.0	40	188	3.7
700----	30	3,166	11.7	40	302	1.4
650----	30	3,778	7.0	41	348	5.2
600----	30	4,434	1.7	46	345	7.6
550----	30	5,121	-3.6	43	327	8.5
500----	29	5,873	-8.8	38	297	9.7
450----	29	6,680	-13.6		284	8.4
400----	29	7,569	-19.9		274	11.7
350----	29	8,546	-26.8		267	13.0
300----	29	9,641	-35.1		258	17.5
250----	29	10,888	-44.4		266	27.0
200----	29	12,351	-54.2		264	32.3
175----	29	13,198	-58.9		264	32.3
150----	29	14,156	-63.5		268	29.7
125----	29	15,265	-67.9		269	20.8
100----	29	16,596	-70.3		275	8.0
80-----	29	17,929	-67.3		95	4.5
60-----	27	19,687	-61.2		95	13.6
50-----	27	20,829	-57.3		94	19.2
40-----	24	22,254	-53.3		88	23.3
30-----	23	24,120	-50.0		93	23.7
25-----	21	25,313	-48.0		90	21.6
20-----	20	26,790	-45.0		88	20.8
15-----	16	28,723	-41.6		73	23.7
10-----	5	31,499	-36.7			
7------						

MONTGOMERY, ALA.
(1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	61	21.0	88	26	2.7
1,000--	30	137	21.3	85	102	1.2
950----	30	585	21.5	73	205	5.6
900----	30	1,052	18.9	72	220	5.1
850----	30	1,541	15.9	71	210	3.5
800----	30	2,054	13.1	63	214	2.7
750----	30	2,594	10.1	59	263	2.7
700----	30	3,167	7.0	51	312	2.1
650----	30	3,767	3.5	47	334	2.5
600----	30	4,417	- .3	42	351	5.1
550----	30	5,103	- 4.0	40	359	5.8
500----	30	5,856	- 8.4	37	350	5.8
450----	30	6,657	-13.7	32	338	7.8
400----	30	7,552	-19.7		337	10.3
350----	30	8,530	-26.5		328	11.3
300----	30	9,626	-34.4		323	14.2
250----	30	10,875	-44.3		321	16.5
200----	30	12,333	-55.5		318	20.4
175----	30	13,175	-59.8		318	22.3
150----	30	14,129	-63.4		318	20.8
125----	30	15,241	-66.4		318	17.1
100----	30	16,589	-67.6		320	9.9
80-----	30	17,937	-66.0		18	6.8
60-----	30	19,704	-60.4		79	12.4
50-----	30	20,851	-56.6		86	15.7
40-----	30	22,281	-52.8		92	17.1
30-----	29	24,154	-49.6		86	19.8
25-----	28	25,346	-48.2		87	21.0
20-----	27	26,824	-45.6		89	22.9
15-----	20	28,754	-42.0		85	19.4
10-----						
7------						

NANTUCKET, MASS.
(1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	14	15.6	87	200	3.5
1,000--	30	132	16.1	81	242	4.9
950----	30	568	16.8	67	267	8.4
900----	30	1,030	14.2	66	265	8.7
850----	30	1,511	11.3	65	264	10.7
800----	30	2,016	8.6	58	264	13.0
750----	30	2,547	6.4	48	257	15.9
700----	30	3,111	3.6	46	259	16.9
650----	30	3,707	.7	40	260	19.2
600----	30	4,349	- 3.2	39	263	21.8
550----	30	5,025	- 7.3		259	21.6
500----	30	5,770	-12.3		260	25.1
450----	30	6,562	-17.4		260	28.4
400----	30	7,441	-23.6		259	30.5
350----	30	8,404	-30.6		258	32.1
300----	29	9,481	-38.8		260	40.2
250----	29	10,708	-47.9		259	46.0
200----	29	12,153	-55.3		264	42.6
175----	29	13,002	-56.8		264	38.1
150----	29	13,977	-57.9		265	30.9
125----	29	15,122	-59.2		267	24.1
100----	29	16,518	-59.7		265	16.1
80-----	29	17,917	-58.3		274	9.3
60-----	28	19,740	-55.2		58	2.5
50-----	28	20,910	-53.1		102	7.0
40-----	26	22,354	-51.2		92	9.9
30-----	24	24.234	-49.0		87	11.7
25-----	23	25,429	-47.2		87	13.2
20-----	17	26,917	-44.4		90	14.6
15-----	14	28,847	-41.1		95	14.8
10-----	6	31,584	-38.1			
7------						

NASHVILLE, TENN.
(995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	177	19.6	85	214	1.6
1,000--	29	132				
950----	29	571	20.3	68	230	8.4
900----	29	1,042	18.0	69	247	9.9
850----	29	1,529	15.6	65	256	10.1
800----	29	2,041	12.9	61	260	11.5
750----	29	2,576	9.9	57	264	12.0
700----	29	3,151	6.6	52	274	12.4
650----	29	3,750	2.9	54	277	14.2
600----	29	4,399	- 1.0	52	282	13.0
550----	29	5,076	- 5.0	46	288	14.2
500----	29	5,831	- 9.7	40	288	15.2
450----	29	6,631	-14.8		290	15.9
400----	29	7,522	-20.6		286	17.1
350----	29	8,495	-27.7		283	19.0
300----	29	9,585	-36.0		285	22.2
250----	29	10,827	-45.5		296	27.6
200----	29	12,279	-55.9		303	33.4
175----	29	13,119	-60.5		304	30.9
150----	29	14,074	-62.5		303	26.2
125----	28	15,188	-64.3		296	20.8
100----	28	16,549	-65.1		301	12.6
80-----	27	17,914	-63.2		346	6.6
60-----	27	19,703	-58.5		69	11.3
50-----	26	20,859	-54.8		82	12.2
40-----	25	22,290	-52.0		82	12.8
30-----	22	24,161	-49.8		90	12.2
25-----	20	25,361	-47.9		92	10.9
20-----	16	26,844	-44.9		80	12.4
15-----	12	28,758	-43.1			
10-----	5	31,491	-39.0			
7------						

N. Y. INT. AP, IDLEWILD
(1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	18.6	79	309	3.1
1,000--	30	134	18.0	73	312	4.5
950----	30	571	16.6	64	302	5.2
900----	30	1,032	14.0	65	286	5.8
850----	30	1,513	11.2	62	279	8.4
800----	30	2,017	8.7	55	270	12.0
750----	30	2,547	6.3	50	273	15.7
700----	30	3,112	3.2	49	274	17.5
650----	30	3,708	- .1	48	276	19.0
600----	30	4,347	- 3.7		279	21.8
550----	30	5,023	- 7.4		273	23.1
500----	30	5,766	-12.2		270	24.7
450----	30	6,554	-17.6		270	25.5
400----	30	7,435	-24.0		274	30.7
350----	30	8,396	-30.9		273	35.6
300----	30	9,473	-38.7		274	40.0
250----	30	10,700	-47.7		276	45.3
200----	30	12,147	-55.3		281	46.8
175----	30	12,996	-57.1		282	42.2
150----	30	13,966	-58.5		281	36.7
125----	30	15,113	-59.5		276	26.8
100----	30	16,506	-60.3		279	19.0
80-----	30	17,902	-58.7		287	8.5
60-----	30	19,722	-55.3		72	3.1
50-----	30	20,892	-53.2		82	7.2
40-----	29	22,334	-51.3		89	12.0
30-----	28	24,214	-49.2		90	14.0
25-----	28	25,415	-47.6		92	15.0
20-----	28	26,896	-45.3		86	15.7
15-----	27	28,833	-41.5		92	18.3
10-----	17	31,613	-36.3		93	15.0
7------						

NOME, ALASKA
(1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	7	3.8	84	302	1.7
1,000--	30	111	4.8	76	312	2.1
950----	30	528	4.5	68	242	1.2
900----	30	969	2.5	64	213	3.9
850----	30	1,430	.1	58	218	4.7
800----	30	1,914	- 2.1	55	221	4.9
750----	30	2,422	- 5.2	51	228	7.8
700----	30	2,963	- 8.3	51	229	4.9
650----	30	3,534	-11.7	46	222	5.6
600----	30	4,145	-15.5	44	238	5.2
550----	30	4,792	-19.9	41	245	6.8
500----	30	5,496	-24.8	39	234	7.0
450----	30	6,247	-30.5	42	232	7.6
400----	30	7,081	-36.8	41	236	9.7
350----	30	7,992	-43.6		240	10.3
300----	30	9,012	-50.2		243	11.1
250----	30	10,195	-51.2		237	10.1
200----	30	11,662	-46.7		232	6.2
175----	30	12,549	-46.0		212	5.1
150----	30	13,576	-45.7		196	4.3
125----	29	14,791	-45.6		173	4.1
100----	29	16,279	-45.4		165	5.1
80-----	28	17,767	-45.1		140	5.8
60-----	28	19,688	-45.0		122	7.2
50-----	28	20,907	-44.9		118	8.0
40-----	27	22,398	-44.9		104	10.3
30-----	23	24,319	-44.2		101	13.8
25-----	22	25,545	-43.0		94	14.8
20-----	19	27,051	-41.2		94	16.5
15-----	16	29,008	-38.6		97	17.5
10-----	7	31,802	-35.0			
7------						

NORFOLK, VA.
(1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	9	20.9	80		0.0
1,000--	30	141	21.0	74	231	1.0
950----	30	582	19.5	65	283	3.1
900----	30	1,048	16.8	66	275	5.2
850----	30	1,533	13.7	62	273	6.2
800----	30	2,042	11.3	53	269	9.3
750----	30	2,575	8.5	52	266	10.1
700----	30	3,146	5.4	47	266	11.9
650----	30	3,745	2.1	44	270	14.0
600----	30	4,390	- 1.5	38	268	16.1
550----	30	5,070	- 5.5	37	265	16.5
500----	30	5,819	-10.2		271	19.2
450----	30	6,620	-15.5		273	22.2
400----	30	7,502	-21.7		279	23.7
350----	30	8,472	-28.6		279	27.4
300----	30	9,558	-36.6		277	29.1
250----	30	10,797	-46.1		275	34.0
200----	30	12,247	-55.9		280	37.5
175----	30	13,089	-59.6		286	36.1
150----	30	14,049	-61.3		284	26.6
125----	29	15,171	-63.6		280	21.8
100----	29	16,543	-63.3		278	14.6
80-----	29	17,920	-61.7		307	3.7
60-----	29	19,722	-56.9		70	7.2
50-----	29	20,884	-54.6		81	13.0
40-----	28	22,325	-51.6		90	15.7
30-----	24	24,206	-48.5		89	16.5
25-----	23	25,411	-46.2		87	15.9
20-----	22	26,907	-43.8		89	15.5
15-----	21	28,853	-40.6		87	16.9
10-----	16	31,655	-34.7		86	20.8
7------	5	34,124	-29.7			

NORTH PLATTE, NEBR
(917 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	848	13.8	88	50	1.0
1,000--	30	104				
950----	30	541				
900----	30	1,002	14.8	81	108	1.7
850----	30	1,487	15.3	65	203	4.9
800----	30	2,000	13.8	58	248	6.4
750----	30	2,535	10.8	56	265	9.5
700----	30	3,115	7.4	53	277	11.1
650----	30	3,717	3.5	53	284	15.9
600----	30	4,368	- .8	48	277	18.8
550----	30	5,047	- 5.5	48	275	22.3
500----	30	5,799	-10.9	45	281	25.1
450----	30	6,594	-16.4	40	277	27.0
400----	30	7,478	-22.3		273	28.4
350----	30	8,446	-29.5		276	35.9
300----	30	9,528	-37.8		274	41.0
250----	30	10,761	-46.9		274	45.9
200----	30	12,212	-55.5		273	50.5
175----	28	13,051	-57.6		273	40.8
150----	28	14,020	-59.8		276	33.2
125----	28	15,156	-61.1		273	27.6
100----	27	16,541	-61.2		276	17.3
80-----	27	17,930	-60.2		315	3.9
60-----	27	19,740	-56.6		72	4.1
50-----	27	20,905	-54.1		79	8.0
40-----	27	22,343	-52.3		87	10.1
30-----	25	24,219	-49.7		82	11.5
25-----	22	25,415	-48.1		84	12.6
20-----	21	26,895	-45.5		84	16.9
15-----	18	28,827	-41.7		84	15.3
10-----	10	31,583	-36.8			

OAKLAND, CALIF.
(1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	14.1	85	289	4.9
1,000--	30	107	14.2	81	284	4.7
950----	30	545	16.0	65	262	3.3
900----	30	1,006	20.3	38	327	7.0
850----	30	1,500	19.7	23	329	6.0
800----	30	2,019	16.5		320	4.3
750----	30	2,559	13.0		278	2.9
700----	30	3,140	9.1		252	3.9
650----	30	3,743	5.1		257	6.2
600----	30	4,398	.7		261	7.0
550----	30	5,080	- 4.0		271	7.8
500----	30	5,836	- 9.6		270	9.7
450----	30	6,630	-15.7		264	12.0
400----	30	7,518	-22.7		258	14.2
350----	30	8,485	-30.0		262	16.3
300----	30	9,565	-38.3		259	19.2
250----	30	10,794	-47.8		260	23.1
200----	30	12,236	-57.1		256	26.0
175----	30	13,076	-59.4		254	26.2
150----	29	14,040	-60.4		259	21.8
125----	28	15,175	-61.9		259	20.0
100----	27	16,553	-63.4		253	12.0
80-----	26	17,925	-62.4		254	2.9
60-----	26	19,718	-58.3		98	6.0
50-----	25	20,872	-55.7		85	10.7
40-----	25	22,300	-53.7		86	12.2
30-----	23	24,163	-51.4		80	14.6
25-----	21	25,352	-49.4		86	16.9
20-----	19	26,819	-46.3		82	15.7
15-----	12	28,737	-43.0		83	16.9
10-----						

OKLAHOMA CITY, OKLA.
(968 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	392	20.2	84	180	4.7
1,000--	30	109				
950----	30	556	20.8	75	192	10.3
900----	30	1,022	20.9	64	216	19.2
850----	30	1,516	19.2	55	232	16.5
800----	30	2,035	16.4	56	239	12.6
750----	30	2,578	13.0	56	254	10.3
700----	30	3,158	9.3	54	264	10.1
650----	30	3,763	5.1	51	279	10.3
600----	30	4,417	.8	47	288	11.3
550----	29	5,103	- 3.5	41	293	10.7
500----	29	5,858	- 8.7	41	289	15.0
450----	29	6,659	-14.0	35	279	16.9
400----	29	7,551	-20.2		285	20.8
350----	29	8,527	-27.2		287	23.7
300----	29	9,620	-35.4		289	23.1
250----	29	10,864	-45.2		287	25.5
200----	29	12,319	-55.8		276	31.3
175----	29	13,162	-59.5		280	34.4
150----	29	14,117	-63.3		284	30.3
125----	29	15,230	-66.2		281	23.9
100----	29	16,575	-67.4		277	14.2
80-----	29	17,927	-65.0		333	2.9
60-----	28	19,703	-59.4		83	10.7
50-----	28	20,852	-56.3		82	14.6
40-----	27	22,279	-53.5		90	18.1
30-----	27	24,142	-50.5		95	18.7
25-----	26	25,337	-48.6		85	17.9
20-----	24	26,813	-46.0		84	17.3
15-----	16	28,753	-41.9		81	15.9
10-----						

OMAHA, NEBR.
(966 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	403	16.0	87	118	2.3
1,000--	30	106				
950----	30	550	17.1	77	127	3.3
900----	30	1,008	16.6	66	191	5.4
850----	30	1,494	14.4	65	238	4.7
800----	30	2,005	12.2	61	265	7.8
750----	30	2,540	9.6	53	271	10.5
700----	30	3,115	6.1	54	283	12.0
650----	30	3,716	2.3	51	286	15.9
600----	30	4,361	- 1.7	51	287	18.7
550----	30	5,042	- 6.1	50	286	22.2
500----	30	5,789	-11.0	44	286	23.7
450----	30	6,587	-16.0	38	284	26.4
400----	30	7,470	-22.1		283	29.1
350----	30	8,438	-29.2		277	33.2
300----	30	9,521	-37.7		276	34.4
250----	30	10,753	-47.1		271	40.8
200----	30	12,199	-56.2		272	49.9
175----	30	13,042	-58.8		274	48.6
150----	30	14,009	-59.4		278	36.7
125----	30	15,147	-61.2		281	28.8
100----	30	16,530	-61.2		281	18.5
80-----	30	17,918	-60.0		293	8.9
60-----	30	19,726	-56.6		35	3.7
50-----	30	20,888	-54.5		69	6.8
40-----	30	22,327	-51.8		78	8.9
30-----	30	24,201	-49.5		86	12.2
25-----	28	25,398	-48.3		86	13.6
20-----	28	26,875	-45.8		84	15.7
15-----	25	28,811	-41.8		86	17.1
10-----	11	31,570	-37.6			

PEORIA, ILL.
(991 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	201	16.3	84	145	0.8
1,000--	30	121				
950----	30	557	17.3	72	212	3.3
900----	30	1,020	15.1	71	276	5.4
850----	30	1,504	12.9	70	282	10.3
800----	30	2,012	10.7	62	275	12.6
750----	30	2,545	8.4	56	274	15.5
700----	30	3,117	5.3	53	276	16.7
650----	30	3,717	1.5	50	282	19.6
600----	30	4,360	- 2.2	47	281	23.9
550----	30	5,040	- 6.1	42	286	27.4
500----	30	5,788	-10.4	36	283	27.0
450----	30	6,584	-15.7		281	27.6
400----	30	7,471	-21.8		281	31.1
350----	30	8,439	-29.0		284	34.2
300----	30	9,523	-37.2		290	36.1
250----	30	10,758	-46.6		290	43.5
200----	30	12,206	-55.7		288	48.6
175----	30	13,051	-58.3		288	48.0
150----	30	14,019	-59.3		286	40.4
125----	30	15,157	-60.7		284	29.1
100----	30	16,544	-61.4		288	17.9
80-----	30	17,929	-60.3		306	9.1
60-----	29	19,737	-56.5		75	5.8
50-----	28	20,899	-53.8		79	8.9
40-----	28	22,341	-51.3		82	11.3
30-----	27	24,218	-49.0		88	14.2
25-----	26	25,421	-47.2		86	15.2
20-----	25	26,902	-45.1		91	15.7
15-----	15	28,833	-41.9		90	15.0
10-----	6	31,607	-36.5			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JUNE 1960

PITTSBURGH, PA. (975 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	353	15.4	81	223	1.0
1,000	30	141				
950	30	579	16.4	70	242	4.3
900	30	1,037	14.5	69	259	8.0
850	30	1,519	11.7	69	259	10.7
800	30	2,024	9.2	61	266	13.8
750	30	2,557	7.3	47	272	14.4
700	30	3,124	4.5	43	277	15.9
650	30	3,721	.8	44	278	19.0
600	30	4,365	- 2.8	43	275	21.6
550	30	5,044	- 6.7	36	283	23.9
500	30	5,789	-11.3		283	26.2
450	30	6,584	-16.6		281	28.8
400	30	7,465	-23.0		284	32.8
350	30	8,430	-30.4		289	34.8
300	30	9,508	-38.5		286	38.1
250	30	10,743	-47.6		290	44.7
200	30	12,186	-56.5		290	51.9
175	30	13,029	-58.1		290	46.8
150	30	13,998	-59.2		287	37.9
125	30	15,131	-60.5		286	25.3
100	30	16,518	-61.1		289	16.9
80	29	17,909	-59.6		303	6.6
60	29	19,723	-56.0		66	6.4
50	29	20,889	-53.7		85	10.9
40	29	22,331	-51.5		86	14.4
30	29	24,212	-48.8		91	15.2
25	28	25,417	-47.0		89	15.9
20	28	26,904	-44.7		89	15.5
15	24	28,854	-40.5		92	19.2
10	17	31,641	-36.2			
7						
5						

POINT ARGUELLO, CALIF. (1000 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	113	12.2	91	325	2.1
1,000	30	115			335	2.7
950	30	551	13.7	76	3	5.6
900	30	1,008	20.1		7	6.4
850	30	1,501	20.8	18	347	5.2
800	30	2,022	17.8		302	4.1
750	30	2,566	13.9		269	3.9
700	30	3,145	9.8		249	5.6
650	30	3,753	5.5		236	5.1
600	30	4,404	1.3		229	5.4
550	30	5,091	- 3.5		239	6.8
500	30	5,844	- 8.5		241	7.2
450	29	6,648	-14.6		241	8.4
400	28	7,575	-21.6		245	10.7
350	28	8,501	-29.3		244	11.5
300	28	9,584	-38.0		237	12.2
250	28	10,814	-47.5		246	16.9
200	28	12,258	-56.7		239	22.0
175	28	13,099	-59.8		244	23.1
150	28	14,058	-61.8		243	23.5
125	28	15,181	-64.1		245	20.8
100	28	16,541	-65.6		246	12.2
80	27	17,896	-65.0		224	1.6
60	27	19,665	-61.0		95	9.5
50	26	20,801	-58.6		93	12.4
40	25	22,212	-55.6		87	14.2
30	23	24,060	-52.7		85	18.5
25	23	25,241	-51.0		85	19.0
20	23	26,699	-48.7		87	20.2
15	22	28,598	-45.3		85	18.7
10	22	31,329	-40.7		88	20.2
7	18	33,752	-37.1		82	20.8
5	14	36,047	-34.9			

PORTLAND, ME. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	20	16.1	81	281	3.3
1,000	30	124	15.8	72	271	2.9
950	30	555	15.3	60	274	7.8
900	30	1,017	13.0	59	274	9.3
850	30	1,495	10.1	57	272	9.5
800	30	1,996	7.3	52	271	13.2
750	30	2,521	6.3	45	265	16.3
700	30	3,086	1.9	44	259	18.5
650	30	3,675	- 1.5	40	261	22.5
600	30	4,313	- 5.0		264	24.1
550	30	4,983	- 9.0		262	25.5
500	30	5,723	-13.9		262	30.5
450	30	6,509	-19.2		259	35.2
400	30	7,382	-25.4		260	35.8
350	30	8,338	-32.4		262	38.7
300	30	9,408	-40.2		262	42.9
250	30	10,629	-48.8		260	47.0
200	30	12,077	-53.7		265	46.0
175	30	12,936	-54.9		267	42.2
150	30	13,915	-56.0		271	36.7
125	30	15,074	-56.6		272	29.9
100	30	16,487	-57.3		273	18.8
80	30	17,900	-56.3		286	8.5
60	28	19,743	-53.4		98	2.5
50	28	20,919	-52.0		77	6.8
40	27	22,373	-50.3		87	7.8
30	25	24,258	-48.5		88	12.6
25	22	25,465	-46.9		87	13.0
20	18	26,956	-44.4		88	15.9
15	[illegible]	28,872	-40.4			
10						
7						
5						

RAPID CITY, S. DAK. (904 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	966	13.0	76	312	2.1
1,000	30	105				
950	30	544				
900	30	1,003			306	2.7
850	30	1,486	13.8	61	305	5.4
800	30	1,996	11.2	61	305	8.0
750	30	2,529	8.6	56	294	12.6
700	30	3,101	5.0	58	294	15.9
650	30	3,696	1.1	55	282	19.0
600	30	4,342	- 3.0	53	275	23.3
550	30	5,015	- 7.6	49	273	26.2
500	30	5,762	-12.6	45	276	29.1
450	30	6,551	-18.1	40	275	31.1
400	30	7,430	-24.3	39	278	34.4
350	30	8,389	-31.6		275	39.4
300	30	9,461	-40.0		276	42.7
250	30	10,682	-49.1		273	47.4
200	30	12,121	-55.8		272	48.4
175	30	12,970	-56.3		273	44.3
150	30	13,946	-57.3		271	39.8
125	30	15,096	-58.6		273	28.6
100	30	16,494	-59.4		276	17.1
80	30	17,893	-58.6		271	7.4
60	30	19,714	-55.6		60	2.3
50	29	20,884	-53.7		64	5.2
40	29	22,325	-51.8		76	8.7
30	26	24,197	-49.8		89	13.0
25	25	25,393	-48.2		88	14.4
20	23	26,876	-46.0		85	15.7
15	16	28,800	-42.6		89	14.8
10	7	31,602	-36.2			
7						
5						

ST. CLOUD, MINN. (977 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	316	11.6	90		0.0
1,000	30	115				
950	30	554	14.5	71	218	1.9
900	30	1,004	12.8	62	290	3.9
850	30	1,482	9.8	63	294	7.0
800	30	1,983	7.0	60	291	10.3
750	30	2,508	4.4	53	284	14.4
700	30	3,071	1.7	44	290	20.4
650	30	3,663	- 1.5	40	291	23.9
600	30	4,300	- 4.7	40	287	29.9
550	30	4,973	- 9.0	40	283	32.3
500	30	5,711	-13.5	39	281	34.8
450	30	6,500	-19.0	41	284	35.4
400	30	7,372	-25.2	35	283	39.8
350	30	8,329	-32.1		280	45.3
300	30	9,399	-40.3		277	49.4
250	30	10,619	-49.3		277	56.9
200	30	12,059	-55.1		273	57.1
175	30	12,912	-55.1		275	51.9
150	30	13,899	-54.6		283	41.0
125	30	15,064	-55.8		282	29.0
100	30	16,477	-57.9		284	19.4
80	30	17,887	-56.6		303	10.1
60	30	19,720	-54.4		51	5.8
50	29	20,891	-52.6		89	10.9
40	28	22,338	-51.1		87	13.2
30	27	24,216	-49.2		87	17.5
25	26	25,416	-47.6		89	19.8
20	22	26,883	-45.2		89	22.3
15	13	28,786	-41.8		85	20.0
10						
7						
5						

ST. PAUL IS., ALASKA (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	10	2.8	92	34	0.6
1,000	29	121	2.5	90	155	2.3
950	29	532	1.3	86	153	1.0
900	29	971	1.0	78	124	1.6
850	29	1,430	.0	67	122	2.1
800	29	1,914	- 1.6	59	124	2.1
750	29	2,421	- 4.1	56	113	1.7
700	29	2,968	- 6.7	50	145	2.9
650	29	3,537	- 9.9	48	150	2.1
600	28	4,154	-13.7	44	211	1.4
550	28	4,804	-17.7	44	244	1.7
500	[illegible]	5,518	-22.6	45	221	2.7
450	28	6,271	-27.9	44	251	3.1
400	27	7,122	-33.9		222	3.9
350	27	8,044	-41.0		233	3.7
300	27	9,076	-48.1		266	2.9
250	27	10,263	-52.8		270	4.3
200	27	11,712	-48.9		244	6.4
175	27	12,593	-47.5		239	5.2
150	27	13,613	-47.1		237	5.1
125	27	14,821	-47.3		216	5.2
100	27	16,297	-47.2		202	3.5
80	26	17,775	-47.2		187	4.7
60	24	19,676	-47.1		126	6.2
50	23	20,880	-47.2		122	7.4
40	23	22,357	-47.1		116	9.1
30	21	24,251	-47.0		105	10.3
25	20	25,466	-46.4		103	13.0
20	15	26,962	-45.0			
15	7	28,873	-43.9			
10						
7						
5						

SALEM, OREG. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	61	9.6	92	312	1.4
1,000	30	164	11.8	80	340	3.3
950	30	595	11.4	71	6	8.5
900	30	1,045	10.2	65	343	8.2
850	30	1,520	9.3	53	308	7.0
800	30	2,021	7.1	50	291	8.7
750	30	2,546	4.8	41	287	11.9
700	30	3,109	2.0	34	285	15.9
650	30	3,700	- 1.4	33	283	19.0
600	30	4,337	- 5.1	31	278	22.7
550	30	5,008	- 9.5	32	275	24.7
500	30	5,745	-14.2		275	29.0
450	30	6,528	-19.5		274	32.8
400	30	7,405	-25.7		275	33.8
350	30	8,355	-33.0		277	38.1
300	30	9,422	-41.1		275	42.0
250	30	10,636	-50.1		275	42.9
200	30	12,071	-55.8		272	45.1
175	30	12,920	-56.4		270	39.8
150	30	13,897	-56.6		270	36.1
125	28	15,055	-57.1		266	28.0
100	27	16,465	-57.0		263	15.7
80	27	17,876	-56.7		265	6.6
60	27	19,706	-54.8		60	3.1
50	27	20,875	-53.6		84	6.4
40	27	22,316	-51.9		83	10.3
30	26	24,188	-49.8		81	13.8
25	26	25,386	-47.9		80	17.3
20	23	26,865	-45.4		84	17.5
15	16	28,781	-41.4		82	18.5
10	[illegible]	31,517	-36.6			
7						
5						

SALT LAKE CITY, UTAH (871 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,288	14.8	53	163	5.8
1,000	30	97				
950	30	535				
900	30	1,005				
850	30	1,496	19.5	33	159	5.8
800	30	2,015	16.8	30	216	1.6
750	30	2,556	13.1	31	267	4.9
700	30	3,137	8.6	36	277	8.4
650	30	3,740	4.2	38	275	12.2
600	30	4,391	- .7	39	269	17.9
550	30	5,070	- 5.9	43	264	21.6
500	30	5,821	-11.2	43	263	24.1
450	30	6,612	-17.3	42	261	26.4
400	30	7,495	-23.6		260	29.1
350	30	8,457	-30.9		261	32.8
300	30	9,533	-39.0		260	38.3
250	30	10,760	-48.0		258	38.1
200	30	12,203	-56.2		259	41.4
175	29	13,047	-57.9		256	39.4
150	29	14,016	-59.7		255	32.4
125	29	15,152	-61.3		259	26.4
100	29	16,537	-61.2		257	15.3
80	29	17,920	-60.8		257	5.2
60	[illegible]	19,724	-56.7		100	4.9
50	27	20,883	-54.8		80	8.2
40	27	22,315	-53.0		82	10.5
30	26	24,181	-50.2		77	14.6
25	25	25,376	-48.3		77	16.1
20	24	26,849	-45.9		81	15.3
15	20	28,790	-42.4		86	20.8
10	5	31,513	-37.7			
7						
5						

SAN ANTONIO, TEX. (985 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	243	22.6	87	145	3.3
1,000	30	113				
950	30	558	21.7	86	167	9.5
900	30	1,031	20.7	73	173	13.6
850	30	1,525	19.2	63	168	11.9
800	30	2,044	16.8	51	164	8.0
750	30	2,587	13.9	42	145	3.9
700	30	3,171	10.5	39	[illegible]	4.1
650	30	3,779	6.5	43	44	6.6
600	30	4,436	2.1	42	30	6.6
550	30	5,127	- 2.3	35	20	6.4
500	30	5,885	- 7.0	31	344	6.4
450	30	6,693	-12.1		321	7.6
400	30	7,591	-18.2		315	8.9
350	30	8,574	-25.3		301	12.2
300	30	9,675	-33.8		290	15.9
250	30	10,928	-43.4		288	20.6
200	30	12,395	-53.7		281	26.2
175	30	13,243	-59.0		282	29.5
150	30	14,197	-64.5		282	26.8
125	29	15,296	-68.5		293	22.0
100	29	16,621	-71.5		307	9.7
80	28	17,942	-68.9		63	8.2
60	27	19,691	-61.8		85	19.4
50	26	20,826	-57.9		89	20.0
40	24	22,239	-54.2		86	22.5
30	22	24,097	-50.2		88	29.9
25	21	25,292	-48.0		89	24.9
20	19	26,770	-45.6		87	26.0
15	15	28,705	-43.0			
10	8	31,458	-38.9			
7						
5						

SAN DIEGO, CALIF. (997 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	124	15.2	93	319	2.3
1,000	30	101				
950	30	528	16.6	71	356	2.1
900	30	1,003	21.4	30	327	4.5
850	30	1,499	22.0	19	301	8.4
800	30	2,023	19.8	21	277	10.3
750	30	2,567	15.8	24	254	11.1
700	30	3,157	11.2	29	237	10.3
650	30	3,761	6.3	34	221	9.9
600	30	4,423	1.2	33	212	9.7
550	30	5,107	- 3.7	30	211	8.7
500	30	5,864	- 8.9		223	8.7
450	30	6,664	-14.5		229	8.5
400	30	7,556	-21.1		229	7.2
350	30	8,529	-28.4		242	7.0
300	30	9,616	-36.7		245	8.4
250	30	10,854	-46.2		248	11.3
200	30	12,309	-54.7		237	19.6
175	30	13,157	-58.0		236	25.8
150	30	14,121	-61.5		238	27.8
125	30	15,241	-65.3		237	23.1
100	30	16,592	-68.0		240	12.0
80	29	17,933	-66.6		180	2.7
60	29	19,691	-61.7		94	9.3
50	29	20,830	-58.5		93	15.7
40	29	22,244	-55.1		93	18.7
30	29	24,096	-51.8		89	20.6
25	29	25,283	-50.0		87	20.4
20	27	26,749	-48.0		91	23.5
15	27	28,660	-44.5		92	22.5
10	23	31,402	-40.6		90	21.6
7	15	33,834	-38.4		95	24.3
5	6	36,146	-36.0			

SAN JUAN, P. R. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	25.7	82	125	5.1
1,000	30	147	25.2	79	116	11.3
950	30	598	22.5	78	108	15.7
900	30	1,068	19.6	78	110	18.1
850	30	1,559	16.7	76	115	16.9
800	30	2,074	14.0	68	114	14.6
750	30	2,610	11.2	57	116	14.0
700	30	3,191	8.1	50	119	12.8
650	30	3,798	4.6	46	129	10.5
600	30	4,448	.9	41	117	8.5
550	30	5,138	- 2.8	36	117	8.2
500	30	5,892	- 7.1	34	108	5.1
450	30	6,698	-12.2	34	108	4.5
400	30	7,597	-18.2		147	1.2
350	30	8,580	-25.5		285	2.9
300	30	9,679	-33.8		281	6.6
250	30	10,930	-43.9		275	6.6
200	30	12,389	-56.3		294	15.0
175	30	13,224	-62.6		301	18.5
150	30	14,161	-69.2		312	18.3
125	30	15,239	-73.1		327	10.3
100	30	16,540	-74.0		45	8.4
80	30	17,854	-70.1		73	16.1
60	29	19,589	-64.1		84	25.1
50	29	20,715	-60.2		91	33.6
40	29	22,119	-56.3		94	37.9
30	28	23,969	-51.4		91	44.1
25	26	25,156	-48.8		93	47.0
20	23	26,633	-45.4		89	48.6
15	18	28,562	-41.1		86	50.1
10	11	31,342	-38.0			

SANTA MONICA, CALIF. (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	38	15.6	90		0.0
1,000	30	109	15.3	89		.0
950	30	547	16.0	71	88	1.4
900	30	1,008	20.2	35	338	2.7
850	30	1,501	20.9	20	322	6.2
800	30	2,022	18.1		284	7.2
750	30	2,562	14.6		260	8.2
700	30	3,150	10.7		238	10.3
650	30	3,756	6.2		224	8.9
600	30	4,414	1.3		225	9.5
550	30	5,099	- 3.5		220	9.3
500	30	5,855	- 8.7		237	8.4
450	30	6,655	-14.8		236	7.4
400	30	7,546	-21.4		234	7.6
350	30	8,517	-28.8		235	9.5
300	30	9,601	-37.4		239	9.9
250	30	10,834	-47.0		243	14.0
200	29	12,281	-56.3		242	17.5
175	29	13,123	-59.2		244	23.1
150	29	14,084	-61.4		245	24.3
125	29	15,207	-64.2		247	18.7
100	29	16,564	-66.4		246	10.7
80	29	17,916	-65.0		134	1.4
60	29	19,688	-60.2		93	11.1
50	28	20,835	-57.2		90	14.4
40	26	22,260	-54.2		86	17.3
30	26	24,116	-51.2		86	19.6
25	24	25,306	-49.4		85	20.4
20	22	26,780	-46.6		88	20.2
15	17	28,707	-42.4		89	18.1
10	8	31,495	-36.9			

SAULT STE. MARIE, MICH. (988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	221	10.7	89	336	1.9
1,000	30	116				
950	30	546	12.7	67	311	3.7
900	30	1,000	11.1	64	307	5.6
850	30	1,475	8.4	67	302	7.2
800	30	1,974	5.4	66	297	7.8
750	30	2,499	3.1	58	293	10.3
700	30	3,057	.5	53	289	13.0
650	30	3,645	- 2.7	51	285	16.7
600	30	4,280	- 6.5	50	281	19.2
550	30	4,949	-10.7	44	278	21.8
500	30	5,683	-15.3	38	279	26.6
450	30	6,466	-20.9		279	28.2
400	30	7,332	-27.3		279	31.1
350	30	8,280	-34.1		278	37.5
300	30	9,342	-41.9		280	41.6
250	30	10,555	-49.9		283	47.4
200	30	11,996	-53.8		284	51.7
175	30	12,855	-53.5		283	44.1
150	30	13,846	-53.7		287	37.5
125	29	15,012	-54.9		285	28.4
100	29	16,432	-56.4		288	19.6
80	29	17,849	-55.8		295	10.3
60	29	19,687	-54.0		14	3.3
50	29	20,861	-52.8		66	6.6
40	28	22,305	-51.1		83	10.5
30	28	24,182	-49.3		82	12.2
25	28	25,381	-47.9		81	14.2
20	24	26,847	-46.2		86	16.7
15	17	28,779	-42.5		83	18.5
10						

SEATTLE, WASH. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	125	11.0	86	128	0.8
1,000	30	165	11.1	83	133	.8
950	30	594	10.3	73		.0
900	30	1,042	8.5	69	270	3.9
850	30	1,514	6.4	70	288	6.2
800	30	2,009	4.5	63	286	8.7
750	30	2,531	2.4	51	288	12.2
700	30	3,089	- .3	39	280	16.1
650	30	3,676	- 3.4	34	275	19.2
600	30	4,308	- 6.9		270	23.1
550	30	4,977	-11.0		272	26.2
500	30	5,708	-15.7		272	29.0
450	30	6,487	-21.2		271	33.8
400	30	7,356	-27.0		270	36.1
350	30	8,305	-34.0		272	39.2
300	30	9,367	-41.8		275	42.6
250	30	10,581	-49.9		276	45.3
200	30	12,024	-53.5		272	45.1
175	30	12,884	-53.6		271	41.6
150	30	13,874	-53.6		267	34.2
125	30	15,046	-54.4		266	27.4
100	30	16,475	-54.7		262	16.1
80	30	17,904	-54.2		259	6.6
60	30	19,753	-52.7		36	1.4
50	28	20,933	-51.8		76	5.6
40	24	22,380	-50.4		80	10.3
30	22	24,268	-48.1		83	14.0
25	20	25,473	-46.6		84	14.8
20	16	26,966	-44.5		87	19.4
15	12	28,899	-41.3			
10						

SHEMYA, ALASKA (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	37	4.5	95	164	1.7
1,000	30	112	4.2	94	266	1.0
950	30	527	2.6	90	344	1.9
900	30	966	1.3	82	64	.6
850	30	1,425	.1	76	43	1.2
800	30	1,910	- 1.3	68	238	.6
750	30	2,423	- 3.4	69	245	1.6
700	30	2,967	- 6.0	60	237	1.7
650	30	3,541	- 8.8	56	206	2.3
600	30	4,162	-12.4	57	254	3.1
550	30	4,817	-16.6	56	257	3.3
500	30	5,532	-21.0	52	253	4.7
450	30	6,294	-26.6	52	232	4.9
400	30	7,143	-33.0	53	213	4.9
350	30	8,068	-40.2		241	8.7
300	30	9,104	-47.4		238	11.7
250	30	10,290	-53.8		253	19.8
200	29	11,725	-51.9		265	19.2
175	29	12,595	-50.1		263	14.8
150	29	13,603	-49.9		261	11.9
125	29	14,797	-49.9		263	7.8
100	29	16,255	-49.4		261	4.9
80	28	17,724	-49.0		234	1.0
60	26	19,611	-48.5		114	4.3
50	25	20,814	-48.5		111	6.0
40	25	22,283	-48.6		89	6.8
30	21	24,171	-48.3		91	11.3
25	17	25,378	-47.5		84	10.9
20	6	26,866	-46.0			
15						
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

JUNE 1960

	SHREVEPORT, LA. (1006 MB.)						SPOKANE, WASH. (932 MB.)						TAMPA, FLA. (1015 MB.)					
					Wind						Wind						Wind	
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	29	76	21.2	87	172	2.9	30	722	10.4	66	194	4.9	30	[illegible]	22.7	92	76	3.9
1,000--	29	127	21.6	83	182	4.5	30	126					30	139	23.3	84	112	5.2
950----	29	574	21.9	62	199	10.1	30	559					30	584	21.4	78	162	5.6
900----	29	1,043	19.6	56	201	10.9	30	1,015	13.6	49	240	7.8	30	1,055	18.9	74	181	4.9
850----	29	1,533	17.2	51	211	9.5	30	1,495	11.1	45	255	10.7	30	1,545	16.7	65	193	5.4
800----	29	2,049	14.4	48	219	7.0	30	1,997	7.5	48	251	11.3	30	2,060	14.1	59	207	5.1
750----	29	2,587	11.2	43	248	4.5	30	2,523	3.7	52	252	12.8	30	2,596	10.9	59	226	4.7
700----	29	3,164	7.6	42	265	3.1	30	3,083	.0	51	258	17.3	30	3,175	7.7	57	224	3.9
650----	29	3,766	3.8	40	297	2.1	30	3,667	- 3.6	49	266	20.2	30	3,776	4.1	54	228	4.3
600----	29	4,416	.1	40	333	3.7	30	4,302	- 7.1	46	270	24.5	30	4,430	.4	49	239	4.9
550----	29	5,100	- 4.3	38	328	5.6	30	4,966	-11.2	42	268	27.4	30	5,114	- 3.6	46	248	4.5
500----	29	5,853	- 8.5		332	8.2	30	5,701	-15.8	36	267	29.3	30	5,871	- 8.3	44	257	5.1
450----	29	6,655	-13.7		332	8.7	30	6,481	-21.1		266	32.4	30	6,674	-13.1	37	268	4.9
400----	29	7,550	-19.6		327	10.7	30	7,348	-27.2		266	34.0	30	7,571	-19.0		272	6.4
350----	29	8,528	-26.7		313	14.6	30	8,298	-34.1		263	35.9	30	8,552	-25.9		276	6.8
300----	29	9,622	-35.1		311	19.0	30	9,359	-42.0		264	39.2	30	9,651	-34.4		284	8.2
250----	29	10,867	-44.8		305	19.8	30	10,572	-49.5		263	42.9	30	10,900	-44.2		298	8.9
200----	29	12,325	-55.2		304	23.7	30	12,019	-52.9		268	42.6	30	12,360	-55.2		313	14.6
175----	29	13,168	-60.0		304	26.6	30	12,880	-52.7		267	37.7	30	13,204	-60.1		316	15.5
150----	28	14,124	-64.5		304	23.5	30	13,875	-53.1		265	31.7	30	14,156	-64.2		329	14.4
125----	28	15,228	-67.9		301	18.3	30	15,048	-53.9		262	24.9	30	15,264	-67.6		337	11.9
100----	28	16,563	-69.5		301	10.9	30	16,478	-54.6		263	13.6	30	16,604	-68.7		6	9.1
80-----	28	17,897	-67.4		16	6.8	30	17,906	-54.4		259	6.4	30	17,944	-66.8		63	11.9
60-----	28	19,659	-60.7		86	14.6	29	19,756	-52.5		65	2.1	30	19,704	-61.0		83	22.0
50-----	28	20,802	-57.5		92	16.5	29	20,937	-51.4		73	7.8	29	20,848	-57.3		89	25.3
40-----	27	22,220	-53.9		92	17.9	28	22,389	-50.3		87	11.1	28	22,277	-52.7		96	29.5
30-----	26	24,077	-50.5		89	20.4	28	24,275	-48.4		80	15.7	27	24,149	-48.9		98	28.8
25-----	26	25,270	-48.7		88	19.6	25	25,468	-47.1		84	17.9	26	25,353	-47.4		89	30.9
20-----	25	26,747	-46.2		89	18.8	25	26,954	-44.5		85	18.3	23	26,830	-44.8		89	28.0
15-----	25	28,673	-42.8		84	19.4	20	28,891	-40.2		89	23.7	13	28,801	-40.7			
10-----	14	31,431	-38.5				14	31,709	-33.4		87	25.6						

	TATOOSH IS., WASH. (1016 MB.)						TOPEKA, KANS. (982 MB.)					
					Wind						Wind	
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	31	10.5	93	239	7.2	30	269	18.1	88	122	7.0
1,000--	30	163	9.8	88	252	8.4	30	108				
950----	30	586	8.4	80	273	8.9	30	552	19.0	75	157	7.4
900----	30	1,034	6.9	76	267	8.7	30	1,016	18.4	65	202	8.4
850----	30	1,503	4.6	70	271	10.7	30	1,505	16.1	60	230	8.7
800----	30	1,995	3.1	59	272	12.8	30	2,018	13.5	56	253	9.7
750----	30	2,511	.8	54	269	15.0	30	2,555	10.9	47	269	9.5
700----	30	3,069	- 1.9	51	274	17.3	30	3,132	7.5	43	281	13.0
650----	30	3,648	- 5.0	49	274	20.4	30	3,730	3.6	45	282	15.0
600----	30	4,281	- 8.3	44	275	25.5	30	4,384	- .9	43	286	18.1
550----	30	4,941	-12.6	41	274	27.0	30	5,065	- 5.4	41	284	20.8
500----	30	5,672	-17.5	41	273	30.7	30	5,816	-10.3	44	283	24.5
450----	30	6,442	-22.3	40	274	37.3	30	6,611	-15.6	43	280	26.0
400----	30	7,310	-28.1	39	276	37.7	30	7,498	-21.5	39	281	27.4
350----	30	8,255	-35.0		279	43.7	30	8,468	-28.7		281	30.9
300----	30	9,313	-42.8		276	46.8	30	9,553	-37.0		280	35.6
250----	30	10,522	-50.4		272	47.6	30	10,790	-46.2		279	43.7
200----	30	11,963	-53.2		270	45.7	29	12,240	-56.2		276	48.0
175----	30	12,823	-53.2		269	40.6	27	13,078	-59.7		280	44.9
150----	30	13,817	-52.7		266	31.9	26	14,033	-61.7		284	36.1
125----	30	14,993	-53.7		267	22.2	26	15,159	-63.1		282	27.4
100----	30	16,425	-54.2		262	13.2	26	16,531	-63.5		288	16.1
80-----	30	17,859	-53.7		252	4.1	26	17,909	-61.4		295	3.1
60-----	28	19,710	-52.6		98	2.1	26	19,707	-57.8		77	6.4
50-----	26	20,890	-51.6		93	6.6	25	20,865	-55.1		87	8.7
40-----	25	22,342	-50.3		86	8.2	25	22,299	-52.5		87	11.5
30-----	22	24,223	-48.5		88	13.4	25	24,169	-50.3		88	14.2
25-----	22	25,427	-46.9		88	15.5	24	25,362	-48.5		85	15.5
20-----	19	26,909	-44.8		87	16.9	21	26,831	-45.9		84	14.8
15-----	15	28,836	-41.1		90	18.8	11	28,774	-42.1			
10-----	[illegible]	31,599	-35.8									

	TUCSON, ARIZ. (922 MB.)						WASHINGTON, D. C. (1006 MB.)					
					Wind						Wind	
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	781	21.2	33	150	5.4	30	88	18.7	81	235	0.8
1,000--	30	70					30	138	18.8	77	233	.8
950----	30	515					30	575	18.0	66	278	3.9
900----	30	997	27.0	23	228	2.9	30	1,040	15.5	64	279	5.6
850----	30	1,500	24.7	23	334	5.6	30	1,522	12.5	65	275	9.5
800----	30	2,028	21.0	24	341	6.8	30	2,029	9.9	59	268	13.0
750----	30	2,576	16.7	27	345	4.3	30	2,560	7.1	57	267	14.6
700----	30	3,165	11.8	34	273	2.1	30	3,128	4.5	53	268	16.5
650----	30	3,770	6.5	42	211	4.9	30	3,730	1.0	50	269	18.8
600----	30	4,431	1.0	45	205	9.1	30	4,368	- 2.6	43	272	20.6
550----	30	5,113	- 4.1	42	203	10.7	30	5,045	- 6.8	42	274	20.8
500----	30	5,870	- 9.6	36	207	12.2	30	5,792	-11.2		276	22.7
450----	30	6,667	-14.8		213	12.6	30	6,587	-16.3		274	23.3
400----	30	7,559	-20.9		216	14.2	30	7,469	-22.4		284	26.2
350----	30	8,532	-28.1		222	15.9	30	8,437	-29.4		282	29.1
300----	30	9,620	-36.0		230	20.2	30	9,519	-37.6		281	34.4
250----	30	10,860	-45.2		234	25.3	30	10,753	-46.6		281	37.3
200----	30	12,322	-53.4		237	30.1	30	12,203	-55.9		286	42.4
175----	30	13,173	-57.6		239	30.9	30	13,046	-58.6		291	38.9
150----	30	14,136	-62.1		242	28.2	30	14,013	-60.3		284	30.9
125----	30	15,251	-66.5		242	21.8	30	15,145	-61.4		278	24.1
100----	30	16,591	-69.3		241	12.2	30	16,525	-62.2		281	16.3
80-----	30	17,931	-66.5		107	1.9	30	17,910	-60.4		301	7.6
60-----	29	19,696	-61.1		87	12.6	30	19,718	-56.4		63	5.4
50-----	29	20,840	-57.4		93	16.5	30	20,882	-54.1		79	9.9
40-----	28	22,260	-53.9		88	18.8	28	22,315	-51.7		84	12.0
30-----	24	24,123	-50.5		88	20.4	28	24,193	-49.0		90	14.0
25-----	22	25,318	-48.2		88	19.4	26	25,396	-47.4		88	13.4
20-----	22	26,797	-45.8		86	19.2	25	26,881	-44.3		90	14.0
15-----	19	28,732	-42.3		82	19.2	20	28,819	-40.6		86	14.8
10-----	7	31,492	-37.8									

	WINNEMUCCA, NEV. (870 MB.)						YAKUTAT, ALASKA (1014 MB.)					
					Wind						Wind	
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	1,310	12.5	35	39	1.4	30	12	8.7	90	80	3.3
1,000--	30	115					30	131	8.6	88	102	4.7
950----	30	555					30	555	6.3	86	133	5.6
900----	30	1,019					30	996	3.8	84	144	3.9
850----	30	1,506	17.8	28	40	3.1	30	1,459	1.6	80	156	3.7
800----	30	2,023	15.8	28	355	4.1	30	1,946	- 1.3	78	144	4.9
750----	30	2,562	12.1	31	322	4.5	30	2,458	- 4.1	73	154	6.0
700----	30	3,140	7.7	36	280	7.4	30	3,000	- 7.2	66	140	6.0
650----	30	3,741	3.2	39	261	11.3	30	3,570	-10.5	61	154	5.6
600----	30	4,390	- 1.5	38	254	16.3	30	4,187	-14.4	62	158	3.7
550----	30	5,068	- 6.5	36	250	19.2	30	4,836	-18.7	59	154	4.1
500----	30	5,815	-11.8	32	253	20.8	30	5,547	-23.3	56	162	5.2
450----	30	6,605	-17.4		259	22.0	30	6,306	-28.6	53	170	4.3
400----	30	7,485	-23.8		264	24.5	30	7,145	-34.8	48	184	7.4
350----	30	8,446	-31.3		265	28.0	30	8,065	-41.5		186	6.4
300----	30	9,520	-39.5		264	32.4	30	9,096	-48.2		187	4.5
250----	30	10,743	-48.8		265	32.6	30	10,288	-50.2		191	7.0
200----	30	12,183	-56.2		261	35.0	29	11,755	-47.0		230	5.2
175----	30	13,028	-57.8		260	34.4	29	12,642	-45.9		219	5.4
150----	30	13,997	-59.6		260	29.1	29	13,668	-46.1		204	5.4
125----	30	15,137	-60.3		265	23.3	29	14,879	-46.5		257	3.7
100----	30	16,523	-61.9		259	15.3	29	16,360	-46.9		236	2.5
80-----	30	17,906	-60.8		259	5.6	29	17,839	-46.6			
60-----	30	19,708	-57.5		80	5.2	29	19,749	-46.2			
50-----	29	20,866	-55.6		90	7.8	28	20,956	-46.1			
40-----	29	22,295	-53.4		85	11.7	28	22,441	-45.9			
30-----	27	24,156	-51.3		87	13.8	27	24,359	-44.8			
25-----	25	25,342	-49.9		79	13.2	26	25,578	-43.6			
20-----	22	26,802	-47.8		84	16.1	23	27,086	-41.2			
15-----	18	28,726	-44.3		88	17.1	15	29,037	-38.5			
10-----	[illegible]	31,450	-39.9				5	31,852	-34.4			

Note: All observations scheduled at 1200, G. C. T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant wind speed is biased toward a lower value as the number of observations on which the resultant is based lessens. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun

ALBUQUERQUE, N. MEX. †

Date	Sun's zenith distance, A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
June									
1------	0.59	0.67	0.77	0.89	1.09	----	----	----	----
2------	.61	.67	.78	.99	1.18	1.07	0.97	0.83	----
3------	----	----	----	.81	1.01	.64	.73	----	0.46
4------	.53	.64	.77	.91	1.13	----	----	.55	.57
5------	.66	.74	.85	.99	1.13	----	----	----	----
6------	.51	.52	.70	.87	----	----	----	----	----
7------	----	----	----	----	.51	----	----	----	----
8------	.67	.73	.84	.97	1.15	----	.82	.72	.65
10-----	----	----	.61	.79	----	----	----	----	----
11-----	----	----	----	----	1.09	----	----	----	----
12-----	.70	.76	.87	.99	1.18	1.03	.91	.81	.75
13-----	.77	.84	.93	1.05	1.19	----	----	----	----
14-----	.69	.81	.93	1.03	1.20	----	----	----	----
15-----	.59	.64	.76	.95	----	----	----	----	----
16-----	.68	.75	.87	1.03	1.19	1.04	.91	.78	.73
17-----	.71	.77	.88	.99	1.15	1.02	.92	.83	.77
18-----	.77	.83	.93	1.03	----	----	----	----	----
20-----	----	----	----	.81	1.06	----	----	----	----
21-----	----	----	----	.97	1.18	----	----	----	----
23-----	.58	.65	.77	.93	----	----	----	----	----
24-----	----	----	----	.95	1.14	.94	.79	.69	.62
25-----	.57	.65	.76	.92	1.12	.94	.79	.67	.58
26-----	.73	.78	.88	1.01	1.20	1.01	.89	.79	.73
27-----	----	----	----	----	1.21	1.08	.97	.85	.79
28-----	.81	.86	.97	1.09	1.18	1.02	.89	.77	.70
29-----	.69	.77	.87	1.00	1.14	.91	.78	.69	.62
30-----	.58	.81	.91	1.04	1.21	1.01	.87	.73	.66
Averages	0.67	0.75	0.83	0.97	1.16	1.01	0.88	0.76	0.68

MAUNA LOA OBS., HAWAII

Date	Sun's zenith distance, A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
June									
1------	1.18	1.26	1.36	1.47	----	----	----	----	----
3------	1.18	1.26	1.36	1.48	----	----	----	----	----
7------	1.09	1.19	1.30	1.42	----	----	----	----	----
8------	1.13	1.22	1.32	1.44	----	----	----	----	----
9------	1.13	1.23	1.34	1.46	----	----	----	----	----
10-----	1.19	1.27	1.36	1.47	----	----	----	----	----
11-----	1.19	1.28	1.37	1.49	----	1.45	1.35	1.26	1.15
12-----	1.19	1.28	1.37	1.50	1.63	1.48	1.37	1.27	1.18
14-----	1.18	1.27	1.36	1.49	1.63	1.50	1.39	1.34	1.23
17-----	1.17	1.24	1.34	1.46	1.61	1.40	1.31	1.20	1.15
22-----	----	----	----	----	1.59	----	----	----	----
23-----	1.14	1.23	1.33	1.45	1.59	----	----	----	----
29-----	----	1.27	1.37	1.47	1.62	1.49	1.39	1.31	1.23
30-----	1.22	1.31	1.40	1.52	1.66	1.52	1.43	1.34	1.27
Averages	1.17	1.25	1.35	1.47	1.62	1.47	1.37	1.29	1.20

OMAHA, NEBR.

Date	Sun's zenith distance, A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
June									
2------	----	----	----	M 0.93	----	----	----	----	----
3------	S 0.43	S 0.55	S 0.70	S .87	H 0.99	----	----	----	----
14-----	M .23	M .36	M .52	M .70	----	----	----	----	----
16-----	----	----	----	----	----	----	----	0.58	----
17-----	S .48	S .58	S .71	----	----	----	----	----	----
22-----	.52	.65	.77	.95	----	----	----	----	----
25-----	K .44	K .50	K .48	K .87	----	----	----	----	----
26-----	I .25	I .36	M .49	----	----	----	----	----	----
Averages	0.39	0.50	0.61	0.86	0.99	----	----	0.58	----

TUCSON, ARIZ.

Date	Sun's zenith distance, A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
June									
8-----	0.67	0.77	0.90	1.07	1.29	----	----	----	----
9-----	.66	.76	.84	1.05	1.31	----	----	----	----
10----	----	----	.95	1.13	1.32	----	----	----	----
11----	.65	.77	[illegible]	1.08	1.37	[illegible]	0.92	0.79	0.68
12----	.77	.92	.98	1.15	1.30	1.03	[illegible]	.72	.60
13----	----	----	----	1.09	1.31	1.02	.82	.70	.57
15----	.64	.73	.87	1.04	----	----	----	----	
16----	.73	.83	.95	1.12	1.34	[illegible]	[illegible]	.83	.74
17----	----	----	----	1.14	----	----	----	.74	.65
19----	H .62	H .72	H .84	H .94	H 1.15	----	----	----	----
20----	----	----	----	----	1.23	----	----	----	----
21----	----	----	.83	----	1.23	----	----	----	----
23----	.57	----	----	----	1.21	H .96	H [illegible]	H .58	H .52
24----	----	----	----	.99	1.28	1.05	.85	.72	.62
25----	.80	.90	1.05	1.19	1.40	[illegible]	.97	.85	.75
26----	.70	.81	.93	1.10	1.38	1.15	.99	.87	.78
27----	.69	.80	.92	1.08	1.26	1.06	.90	.79	.67
28----	----	----	----	----	1.18	----	----	.64	.54
Averages	0.68	0.80	0.91	1.08	1.28	[illegible]	0.88	0.75	0.65

BLUE HILL OBS., MASS.

Date	Sun's zenith distance, A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
June									
6-----	----	----	----	----	----	[illegible]	[illegible]	[illegible]	[illegible]
7-----	----	----	----	----	----	----	[illegible]	[illegible]	.71
8-----	0.81	0.91	1.03	1.16	1.39	1.10	----	[illegible]	.64
9-----	.75	.83	.93	1.12	1.40	1.14	1.00	[illegible]	[illegible]
11----	----	----	----	----	----	----	.93	[illegible]	[illegible]
13----	.59	.72	.84	----	----	----	----	----	----
21----	.76	.87	1.01	1.18	----	----	----	----	----
22----	----	----	1.06	1.18	----	----	----	----	----
26----	----	----	----	----	----	----	[illegible]	.72	.61
27----	.69	.81	.94	1.12	1.37	----	----	----	----
Averages	0.72	0.83	0.97	1.15	1.39	1.13	0.96	0.81	0.70

MADISON, WIS.

Date	Sun's zenith distance, A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
June									
2-----	----	S 1.05	----	----	----	----	----	----	----
3-----	----	----	----	1.22	----	----	----	----	----
8-----	----	----	----	----	S 1.34	S 1.02	S 0.78	S 0.67	S 0.56
19----	0.76	----	1.01	1.18	----	----	----	----	----
25----	.88	.99	1.12	S 1.26	1.39	----	----	----	----
29----	.78	.91	1.02	----	----	----	----	----	----
Averages	0.81	0.98	1.05	1.22	1.37	1.02	0.78	0.67	0.56

GUAM, M. I.

Date	Sun's zenith distance, A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.29
June									
4-----	----	----	M 0.67	M 0.80	----	----	----	----	----

* Values corresponding to true solar noon.
† Data should be considered doubtful due to moisture in instrument.
H Haze
S Slight haze - indeterminable.
M Moderate haze - indeterminable.
I Intense haze - indeterminable.
K Smoke.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the [illegible] this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Albuquerque, N. Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. D.	Blue Hill Obs., Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area	Cape Hatteras, N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.	Davis, Calif.	Dodge City, Kans.	El Paso, Tex.	Ely, Nev.	Flaming Gorge, Utah	Ft. Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Indianapolis, Ind.	Inyokern, Calif.
June 3----	729	636	842	557	620	414	845	715	526	362	772	334	683	---	360	322	404	681	756	755	765	776	657	838	824	737	650	427	297	809	750	598	458	682	869
June 4----	769	304	682	468	732	555	735	498	374	105	774	139	678	--	668	685	403	666	715	771	747	770	710	647	833	679	629	441	382	761	147	580	689	691	816
June 5----	627	630	626	630	657	509	928	697	837	544	761	525	643	---	696	291	337	475	459	728	737	223	768	419	765	746	639	544	774	836	685	529	647	497	609
June 6----	606	315	654	461	616	541	620	536	721	671	719	672	669	---	---	664	481	748	660	750	750	96	675	346	685	655	638	541	768	502	613	611	719	737	782
June 7----	636	660	659	389	686	435	746	547	723	742	755	691	688	---	641	755	392	741	356	786	746	209	742	518	317	457	613	692	---	544	564	590	435	640	832
June 8----	737	630	453	530	709	304	811	595	179	751	666	751	658	---	269	683	528	726	740	781	765	288	730	521	479	675	661	451	--	585	542	501	490	733	931
June 9----	383	539	310	648	740	621	718	534	109	748	744	758	671	---	809	554	710	731	748	754	742	642	560	486	605	706	645	642	530	633	572	677	753	711	913
Average------	641	531	604	526	680	483	772	589	495	561	741	553	670	---	574	565	465	681	633	761	750	429	693	539	644	665	639	534	550	667	553	582	599	670	822
June 10----	351	478	460	682	436	581	806	541	828	733	754	771	650	---	858	779	719	673	547	499	737	410	600	673	398	641	625	658	356	439	704	712	736	587	909
June 11----	613	---	624	671	458	390	665	728	564	730	710	704	555	---	833	746	---	500	549	784	735	501	699	577	687	716	633	740	739	738	477	649	557	336	879
June 12----	825	---	383	669	696	585	754	281	828	318	766	324	494	584	728	421	644	87	324	755	736	544	775	819	821	584	636	750	423	827	696	678	659	303	893
June 13----	784	---	179	686	582	615	782	672	804	718	714	726	550	590	703	612	639	180	109	679	757	619	781	704	761	794	635	743	635	824	503	616	727	413	880
June 14----	---	---	188	711	107	465	375	504	700	371	561	420	685	463	758	775	---	392	746	184	684	777	752	612	423	776	627	690	527	725	410	740	603	148	852
June 15----	---	---	196	734	216	645	724	576	219	176	638	121	680	588	797	229	641	447	665	428	632	670	748	627	435	780	592	597	166	323	530	628	776	711	900
June 16----	810	238	623	737	427	573	844	660	819	652	731	676	626	598	768	256	647	645	451	607	734	800	762	821	810	670	614	696	530	826	708	736	761	519	892
Average------	677	---	379	699	417	551	709	566	680	528	697	535	606	565	778	546	658	418	484	562	716	617	731	690	619	709	623	696	482	672	575	780	689	431	886
June 17----	809	634	279	335	625	407	757	348	614	672	754	677	604	580	520	684	399	164	797	---	759	764	(772)	545	425	794	628	294	735	700	705	578	418	276	750
June 18----	740	---	609	756	401	441	433	706	863	461	725	473	542	575	796	349	632	507	354	675	786	758	758	699	698	749	628	439	801	736	731	711	484	646	---
June 19----	663	---	360	470	520	460	672	742	420	700	765	743	610	532	669	726	469	621	628	513	768	607	759	843	492	715	655	451	624	685	559	646	550	538	---
June 20----	754	---	442	623	490	501	---	742	145	673	---	667	585	550	450	214	416	663	594	548	797	734	752	869	798	657	649	518	616	811	---	538	599	596	945
June 21----	785	---	112	535	676	475	---	363	---	739	726	745	637	(547)	193	---	197	616	290	786	784	576	723	885	848	729	628	366	334	---	486	128	499	472	940
June 22----	393	---	69	569	747	536	---	247	603	661	777	668	568	557	769	784	546	429	540	769	742	662	710	844	821	729	644	402	688	818	290	327	584	519	---
June 23----	621	618	369	753	605	588	---	158	635	454	775	466	294	---	726	457	559	369	555	759	760	586	708	865	604	675	638	682	611	719	746	559	701	389	940
Average------	681	---	320	577	580	487	---	472	547	623	754	634	548	(557)	589	536	460	481	537	675	771	670	(740)	793	669	721	638	450	630	745	586	498	548	491	894
June 24----	810	669	423	722	343	437	---	174	851	189	761	166	239	---	768	524	638	452	595	695	755	524	658	861	817	438	632	691	758	809	731	593	625	619	954
June 25----	798	661	770	723	581	445	---	347	839	465	736	486	(421)	---	509	444	421	732	788	804	780	763	744	857	774	249	632	656	664	779	499	617	539	747	943
June 26----	821	500	488	694	575	289	---	150	620	734	796	709	622	---	200	745	244	703	514	746	775	762	755	837	686	240	645	610	678	808	715	215	399	756	885
June 27----	824	580	296	636	439	323	---	356	818	724	765	730	643	---	667	721	(521)	542	318	778	784	747	766	734	558	569	590	341	---	806	744	780	513	472	924
June 28----	821	288	165	---	677	367	---	248	700	679	758	708	595	---	798	710	658	420	700	753	757	754	770	866	801	643	648	507	642	808	731	636	565	188	924
June 29----	796	189	480	581	403	542	---	509	781	---	530	613	606	---	---	705	545	452	414	537	750	742	746	873	820	650	660	667	742	828	724	633	619	408	912
June 30----	802	125	249	647	376	579	---	411	734	---	730	511	649	---	647	585	617	334	543	439	758	738	743	872	796	651	643	704	710	834	588	606	683	300	863
July 1----	780	671	562	---	335	578	---	358	617	475	755	507	645	---	590	777	581	252	515	627	738	662	609	582	794	651	553	---	635	816	689	205	628	452	894
Average------	807	460	429	667	466	445	---	319	745	544	729	554	(552)	---	597	651	(528)	486	549	672	762	711	724	810	756	511	625	597	690	811	678	535	571	493	912

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

Canadian radiation data published in Canadian Bulletin effective January 1960.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Lake Charles, La.	Lander, Wyo.	Laramie, Wyo.	Las Vegas, Nev.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.*	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.
June 3----	686	795	787	658	821	---	215	393	757	663	492	741	318	670	690	385	374
June 4----	469	801	802	661	789	---	164	229	293	688	---	745	442	607	740	167	212
June 5----	600	763	777	471	698	---	241	185	814	327	296	717	268	517	698	469	611
June 6----	633	720	756	438	843	---	377	182	519	139	---	727	501	647	694	627	679
June 7----	466	533	653	686	799	---	492	385	468	147	---	---	520	---	735	725	610
June 8----	430	319	245	733	848	---	---	536	808	323	---	756	349	699	681	746	761
June 9----	627	562	476	762	706	---	---	654	748	386	631	---	492	696	532	700	696
Average------	559	642	642	630	786	---	298	366	629	382	---	737	413	639	681	546	563
June 10----	643	590	508	778	714	---	578	711	405	314	---	616	456	699	443	692	583
June 11----	674	695	531	760	544	---	641	714	230	393	851	744	579	548	651	644	678
June 12----	570	752	533	759	419	---	498	648	239	156	872	747	641	712	650	299	133
June 13----	---	787	790	746	421	---	455	565	628	159	658	727	675	732	225	674	493
June 14----	662	465	500	739	521	---	401	609	438	695	863	492	498	681	554	244	190
June 15----	704	505	278	643	839	---	289	348	597	638	834	721	320	656	731	358	129
June 16----	724	799	796	730	682	---	545	642	344	488	851	745	572	---	378	630	669
Average------	663	656	562	737	591	---	487	605	412	406	822	685	534	671	519	506	411
June 17----	578	521	594	---	---	---	673	699	837	690	852	711	603	---	496	286	474
June 18----	724	555	549	744	789	---	660	779	510	428	759	758	446	701	778	426	626
June 19----	712	599	575	837	795	---	641	764	813	673	651	723	328	669	768	704	729
June 20----	651	786	777	---	---	---	---	762	237	600	758	789	285	691	666	568	726
June 21----	(641)	834	723	813	507	837	751	761	222	363	789	702	429	694	582	673	668
June 22----	684	779	747	812	589	582	726	752	589	174	848	742	607	688	654	613	323
June 23----	538	560	704	810	440	793	675	748	242	613	742	738	639	716	389	417	419
Average------	(647)	662	667	803	624	---	687	752	493	506	771	738	477	693	619	527	566
June 24----	238	795	791	815	632	563	696	737	818	632	742	718	623	650	221	215	206
June 25----	353	722	756	840	621	323	670	758	832	645	841	765	450	612	274	496	642
June 26----	450	711	700	833	746	191	719	786	698	609	522	769	598	705	278	719	743
June 27----	625	627	755	825	(719)	702	760	785	639	559	674	748	528	715	371	719	608
June 28----	681	664	753	819	120	738	761	790	477	662	766	646	664	726	311	697	702
June 29----	618	625	769	811	646	712	753	780	716	585	865	710	396	719	570	532	338
June 30----	659	735	713	806	526	792	716	740	418	545	883	723	640	707	515	416	577
July 1----	654	737	696	681	395	716	659	706	623	431	868	708	700	724	374	525	110
Average------	535	702	742	804	(551)	592	717	760	653	583	770	723	575	695	364	540	491

1960	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Page, Ariz.	Portland, Me.	Pullman, Wash.	Rapid City, S. Dak	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Seattle-Tacoma, Wash.	Shreveport, La.	Spokane, Wash.	State College, Pa.	Tampa, Fla.	Washington, D. C. (Obs & Test Dev Ctl)
June 3----	683	574	684	732	278	- -	748	432	335	692	717	560	283	711	740	570	584	603
June 4----	474	658	467	625	400	810	750	396	233	673	396	508	701	521	822	710	418	367
June 5----	694	629	443	647	684	761	(211)	488	782	682	190	765	630	551	758	593	687	640
June 6----	625	574	462	537	744	774	699	412	636	596	535	820	426	610	766	776	653	435
June 7----	751	712	457	495	684	845	756	649	806	578	664	828	652	562	814	756	682	660
June 8----	418	328	371	---	817	819	358	677	772	661	538	813	746	631	818	803	470	652
June 9----	236	550	612	---	633	661	167	761	384	651	781	804	735	683	583	795	579	646
Average------	554	575	499	589	606	778	(527)	545	564	648	546	728	696	610	757	715	582	572
June 10----	334	592	646	---	798	---	551	770	137	541	656	627	539	671	732	742	689	695
June 11----	121	325	670	699	758	693	276	756	385	670	712	125	504	630	689	693	720	716
June 12----	130	592	460	749	499	765	364	750	667	664	661	808	755	604	783	759	737	377
June 13----	145	518	732	656	763	465	734	712	686	575	668	727	541	(520)	588	237	730	384
June 14----	741	408	770	627	593	162	399	754	653	699	673	572	156	(745)	238	721		490
June 15----	---	721	755	645	50	386	342	689	692	717	597	551	169	594	583	[illegible]	722	593
June 16----	399	541	661	768	624	529	615	736	436	697	643	130	734	421	713	746	520	725
Average------	312	528	671	691	584	500	469	738	522	652	659	506	485	(598)	618	441	686	566
June 17----	747	511	780	719	717	860	414	724	672	666	706	808	616	743	688	517	275	463
June 18----	688	684	751	575	561	786	759	719	813	691	703	139	522	746	798	441	503	518
June 19----	626	692	666	720	781	832	370	799	736	631	669	580	423	717	768	694	[illegible]	639
June 20----	---	657	668	800	535	567	692	791	149	680	748	834	372	598	452	765	554	704
June 21----	---	513	710	794	792	826	830	769	106	683	763	799	606	687	---	525	330	586
June 22----	---	609	676	782	747	814	772	765	561	---	769	234	738	664	759	305	536	[illegible]
June 23----	782	361	609	783	576	792	737	777	(185)	456	747	488	741	590	771	345	639	361
Average------	711	575	694	739	673	782	653	763	(461)	634	729	555	574	678	706	507	480	493
June 24----	792	395	610	785	109	776	793	767	767	98	712	243	329	306	752	481	483	498
June 25----	789	354	459	772	657	827	785	775	678	253	716	822	498	148	780	766	666	744
June 26----	702	283	489	792	737	775	551	785	733	572	716	666	509	217	736	778	[illegible]	696
June 27----	329	535	749	786	758	799	641	774	532	607	738	686	738	642	754	749	467	739
June 28----	501	116	766	789	720	772	746	813	407	627	616	473	732	656	821	761	468	710
June 29----	410	593	771	791	761	795	473	790	746	578	750	766	340	680	756	392	[illegible]	472
June 30----	156	503	780	799	614	639	659	763	490	629	735	812	332	662	---	536	[illegible]	[illegible]
July 1----	736	374	716	721	636	807	748	710	744	624	705	676	311	679	774	96	682	221
Average------	552	394	667	779	624	774	674	772	637	498	711	636	471	499	768	569	505	[illegible]

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

* The daily total solar radiation amounts for Manhattan, Kansas, should be reduced by 2%, from July 1, 1957 through March 30, 1959.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

JUNE 1960

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bismarck, N. Dak.	384	324	---	---	337	331	329	---	---	318	316	334	338	338	---	322	308	317	316	---	373	378	372	333	310	295	322	302	334	338	
Caribou, Me.	---	---	---	331	---	---	---	---	381	348	340	366	388	360	---	---	333	---	358	---	---	364	---	---	---	343	353	331	329	---	
Ft. Worth, Tex.	329	345	334	363	324	313	320	318	315	303	306	306	315	326	319	318	312	297	317	330	295	296	288	---	---	---	304	312	300	289	
Green Bay, Wis.	303	379	350	319	321	---	298	315	301	---	---	298	323	337	322	---	305	316	317	---	---	346	---	362	338	312	305	---	352	315	
Silver Hill, Md. †	401	383	366	---	367	359	359	383	427	407	383	332*	348*																		

† Observations temporarily suspended June 13, 1960.

The spectrophotometer measures the total amount of ozone in the atmosphere, i. e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observations can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations, therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational procedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer," Annals of the International Geophysical Year, Volume V, Pergamon Press, 1957.

CONDENSED CLIMATOLOGICAL SUMMARY

DELAYED DATA

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
November 1959										
Alaska	Cape Decision	63	7	Anaktuvuk Pass	-37	21+	Shearwater Bay	32.18	Anatuvuk Pass	0.00
December 1959										
Alaska	Ketchikan	60	5	Allakaket	-58	10+	Little Port Walter	35.62	2 Stations	.03
Hawaii	Univ. of Hawaii	90	3	Mauna Loa Slope Obs.	22	29	Puohokamoa	33.26	Puu Laau	.00
January 1960										
Alaska	Eklutna Project	54	4	Fort Yukon FAA	-63	14	Port Alexander	21.30	Wainwright	.01
Hawaii	2 Stations	87	28+	Mauna Loa Slope Obs.	25	22+	Papaikou Mauka	33.31	4 Stations	.00
February 1960										
Alaska	2 Stations	55	28+	Sleetmute	-47	15	Port Alexander	13.26	2 Stations	T
Hawaii	Makaweli	91	8	Haleakala Summit	22	28	Waikamoi Dam	47.65	3 Stations	.00
March 1960										
Alaska	2 Stations	54	22+	Allakaket	-47	19+	Ketchikan	24.84	4 Stations	.00
Hawaii	Honolulu WBAP	89	17	Haleakala Summit	22	22	Kahana	41.49	Honuaula	.12
April 1960										
Alaska	Ladd Air Force Base	75	30	Anaktuvuk Pass	-38	5	Ketchikan	15.70	2 Stations	T
Hawaii	4 Stations	89	28+	Mauna Loa Slope Obs.	26	8	Puohokamoa 2 343	45.44	10 Stations	.00
May 1960										
Hawaii	2 Stations	90	30+	Mauna Loa Slope Obs.	29	10	Kahana	33.44	2 Stations	.00

See reference notes with current data.

CORRECTIONS

	Month:	December 1959
page 478:	Anchorage, Alaska	7 mb. temperature should be -43.1°C.
page 479:	Caribou, Maine	10 mb. height should be 30,531 gpm.
page 482:	St. Paul Island, Alaska	10 mb. height should be 31,426 gpm.
	Month:	January 1960
page 5:	Santa Maria, Calif.	Sea level pressure should be 1020.2 mb.
	Month:	May 1960
page 192:	Sheridan, Wyo.	Sea level pressure should be 1013.0 mb.

CLIMATOLOGICAL DATA

DELAYED DATA

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station ∅	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F. or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M p h		M p h.			0–3	4–7	8–10	0–10	%
Majuro May 1960	10	1009.5	1009.8	85	77	80.6	----	86	30+	74	15+	0	0	76	84	14.27	----	2.06	28	1	0.0	0	13.5	E	29	E	22	0	7	24	8.7	49

See reference notes with current data.

STORM SUMMARY

DELAYED DATA

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				Ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS
January 1960																													
Kansas																		10	11	5	0					1	19		
May 1960																													
Hawaii								2	2							2	0									0	0	5	5

See reference notes with current data.

RAWINSONDE DATA

Average monthly values

1 FT. HUACHUCA, ARIZ. (858 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	14	1,428	4.5		190	2.7
1,000--	14	158				
950----	14	584				
900----	14	1,031				
850----	14	1,502	7.1		156	4.3
800----	14	2,000	5.9		188	4.5
750----	14	2,520	3.7		211	4.1
700----	14	3,084	.8		232	7.0
650----	14	3,669	-2.5		265	7.2
600----	14	4,306	-6.6		274	9.9
550----	14	4,970	-11.3		254	14.2
500----	14	5,703	-16.7		253	16.1
450----	14	6,474	-22.7		260	18.3
400----	14	7,341	-28.3		255	23.1
350----	14	8,286	-35.0		251	40.2
300----	13	9,348	-42.3		251	41.6
250----	13	10,557	-51.0		253	51.7
200----	13	11,981	-57.9		254	66.6
175----	13	12,817	-61.0		261	60.2
150----	12	13,785	-65.4		256	40.2
125----	11	14,892	-66.2		263	47.6
100----	10	16,252	-67.1		266	41.2
80-----	6	17,602	-66.3			
60-----	6	19,348	-64.9			
50-----	5	20,462	-62.5			
40-----	5	21,845	-60.6			
30-----	5	23,656	-56.8			
25-----						
20-----						
15-----						

1/ YUMA, ARIZ. (1001 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	105	9.2	60	336	2.9
1,000--	31	138			337	3.9
950----	31	568	12.9	43	354	7.0
900----	31	1,021	11.1	40	9	4.5
850----	31	1,496	8.6	39	4	3.7
800----	31	1,995	6.1	38	331	2.1
750----	31	2,521	3.9	36	316	3.3
700----	31	3,079	1.0	32	300	5.8
650----	31	3,668	-2.3	33	301	8.5
600----	31	4,303	-6.2		298	12.4
550----	31	4,975	-10.8		299	15.9
500----	31	5,704	-15.8	33	285	19.0
450----	31	6,481	-21.9		282	21.8
400----	31	7,345	-28.4		285	23.5
350----	31	8,287	-35.8		276	29.3
300----	31	9,341	-43.7		277	35.8
250----	31	10,544	-51.9		271	43.9
200----	31	11,965	-58.4		268	53.6
175----	28	12,799	-60.4		269	52.3
150----	24	13,758	-62.1		270	45.7
125----	19	14,888	-64.7		273	38.7
100----	17	16,235	-66.2		284	29.0
80-----	16	17,586	-64.3		277	19.6
60-----	15	19,356	-63.5		309	10.3
50-----	14	20,471	-62.3		329	5.2
40-----	12	21,857	-59.5		17	7.2
30-----	12	23,665	-56.9		38	8.7
25-----	12	24,824	-54.8		35	11.9
20-----	9	26,252	-52.2			
15-----	8	28,130	-48.7			

2/ YUCCA FLAT, NEV. (883 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,196	4.0	84	325	2.1
1,000--	31	205				
950----	31	614				
900----	31	1,047				
850----	31	1,504	.3	59	349	2.7
800----	31	1,989	-1.7	56	205	2.5
750----	31	2,500	-3.8	53	231	6.4
700----	31	3,044	-5.6	44	247	9.9
650----	31	3,616	-9.2	42	273	12.2
600----	31	4,236	-13.2	44	280	14.2
550----	31	4,886	-17.2	42	278	18.3
500----	31	5,602	-21.9	39	275	21.4
450----	31	6,361	-26.9	39	276	25.5
400----	31	7,210	-32.7		279	28.6
350----	31	8,138	-39.2		279	32.4
300----	31	9,178	-46.7		275	37.1
250----	31	10,367	-54.0		271	43.1
200----	31	11,779	-59.2		267	48.6
175----	31	12,615	-59.3		266	50.7
150----	31	13,583	-58.5		265	46.2
125----	31	14,728	-59.1		267	42.6
100----	31	16,121	-61.6		267	36.9
80-----	30	17,502	-62.5		265	29.9
60-----	29	19,278	-62.0		269	22.2
50-----	26	20,406	-60.9		271	18.7
40-----	23	21,805	-59.8		265	15.0
30-----	22	23,603	-58.5		266	15.0
25-----	20	24,756	-57.4		270	12.4
20-----	14	26,184	-55.7		272	17.1
15-----	9	27,994	-53.0			

2 YUMA, ARIZ (1004 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	105	6.0	69	331	0.8
1,000--	28	160			327	1.0
950----	28	583	9.8	42	336	5.4
900----	28	1,033	7.2	42	348	2.5
850----	28	1,501	4.8	43	298	2.3
800----	28	1,993	1.9	42	279	5.8
750----	28	2,509	-.4	39	270	9.7
700----	28	3,061	-3.0	35	268	12.8
650----	28	3,644	-6.1	32	267	15.3
600----	28	4,266	-10.5	35	267	20.4
550----	28	4,929	-14.7	32	267	24.1
500----	28	5,647	-19.0		264	29.5
450----	28	6,418	-24.7		261	33.4
400----	28	7,270	-30.8		260	39.8
350----	28	8,205	-37.8		255	44.5
300----	28	9,250	-45.6		256	49.4
250----	28	10,443	-53.5		256	58.3
200----	27	11,867	-58.7		256	66.5
175----	27	12,704	-59.5		257	63.3
150----	25	13,665	-61.2		258	62.0
125----	22	14,798	-62.9		262	61.0
100----	21	16,167	-65.5		263	49.5
80-----	19	17,511	-66.2		259	41.0
60-----	19	19,258	-65.0		264	24.1
50-----	19	20,373	-63.3		263	24.7
40-----	18	21,750	-61.1		264	20.8
30-----	16	23,546	-58.2		256	23.1
25-----	15	24,710	-56.0		256	20.8
20-----	14	26,152	-52.3		272	18.3
15-----	11	28,047	-47.7		272	19.6

3/ COLD BAY, ALASKA (998 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	27	-1.8	83	157	8.7
1,000--	28	11				
950----	28	419	-3.1	74	118	2.1
900----	28	845	-5.3	73	112	1.9
850----	28	1,292	-7.7	64	191	4.7
800----	28	1,763	-9.7	51	206	3.9
750----	28	2,255	-12.3	44	212	4.3
700----	28	2,784	-15.4	42	218	6.4
650----	28	3,333	-19.0	43	235	8.0
600----	28	3,931	-23.1	41	220	7.2
550----	28	4,555	-27.4	43	210	6.6
500----	28	5,243	-32.3	46	211	12.2
450----	28	5,970	-37.5		212	12.0
400----	28	6,784	-43.0		215	12.8
350----	28	7,675	-48.3		186	13.0
300----	28	8,678	-53.1		219	9.7
250----	28	9,850	-53.7		224	12.4
200----	27	11,286	-52.6		223	15.9
175----	25	12,139	-51.2		223	13.6
150----	21	13,136	-49.5		200	9.3
125----	21	14,333	-49.3		196	12.2
100----	21	15,798	-49.3		200	8.5
80-----	18	17,274	-50.2			
60-----	16	19,156	-50.0			
50-----	15	20,350	-50.0			
40-----	12	21,778	-50.1			
30-----	11	23,678	-51.2			
25-----	10	24,849	-51.6			
20-----	10	26,294	-52.9			
15-----	9	28,151	-53.5			

3 YUMA, ARIZ. (1002 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	27	105	8.3	49	316	3.3
1,000--	27	144			352	3.3
950----	27	573	11.6	33	337	8.5
900----	27	1,022	9.0	34	338	10.7
850----	27	1,492	6.1	35	325	12.8
800----	27	1,986	3.3	32	315	15.0
750----	27	2,507	.5	33	306	18.3
700----	27	3,058	-2.7	33	304	20.2
650----	27	3,641	-5.8	31	304	26.6
600----	27	4,265	-9.2		305	30.7
550----	27	4,932	-13.5		303	35.4
500----	27	5,651	-18.4		300	42.2
450----	27	6,426	-24.0		302	46.8
400----	27	7,278	-30.2		300	53.8
350----	27	8,215	-37.2		296	61.4
300----	27	9,264	-44.8		294	65.9
250----	27	10,463	-52.5		299	83.9
200----	25	11,879	-58.6		298	82.8
175----	23	12,712	-59.2		292	90.0
150----	22	13,684	-59.4		294	76.2
125----	21	14,813	-62.5		287	57.1
100----	18	16,173	-65.1		290	50.7
80-----	18	17,530	-65.7		280	36.5
60-----	14	19,287	-65.1		278	18.3
50-----	13	20,406	-62.8		289	17.9
40-----	13	21,794	-59.5		193	1.6
30-----	13	23,609	-56.2		306	3.5
25-----	12	24,776	-54.3			
20-----	11	26,204	-53.0			
15-----	8	28,069	-51.2			
10-----	7	30,744	-44.8			

3 FT. HUACHUCA, ARIZ (855 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	5	1,428	1.0			
1,000--	5	154				
950----	5	570				
900----	5	1,012				
850----	5	1,477				
800----	5	1,966	1.3			
750----	5	2,476				
700----	5	3,033	-3.0			
650----	5	3,614	-5.7			
600----	5	4,241	-9.4			
550----	5	4,898	-14.1			
500----	5	5,624	-19.4			
450----	5	6,386	-25.4			
400----	5	7,244	-31.5			
350----	5	8,177	-37.6			
300----	5	9,226	-43.3			
250----	5	10,437	-49.8			
200----	5	11,870	-56.7			
175----	5	12,718	-56.4			
150----						
125----						
100----						
80-----						
60-----						
50-----						
40-----						
30-----						
25-----						
20-----						
15-----						
10-----						

4/ YUMA, ARIZ. (999 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	105	13.5	45	50	1.7
1,000--	30	119			52	3.3
950----	30	556	18.2	31	298	6.4
900----	30	1,017	15.6	32	298	8.5
850----	30	1,499	12.7	31	290	7.6
800----	30	2,005	9.6	30	284	7.4
750----	30	2,536	6.0	29	281	8.9
700----	30	3,099	2.6	29	282	12.4
650----	30	3,695	-.9		281	15.0
600----	30	4,328	-5.0		279	18.7
550----	30	5,003	-9.9		282	21.2
500----	30	5,734	-15.2	30	284	27.4
450----	30	6,517	-21.4	32	282	30.1
400----	30	7,378	-28.1	36	281	32.3
350----	30	8,321	-35.9		282	34.8
300----	30	9,373	-44.6		283	37.9
250----	30	10,568	-54.0		281	43.3
200----	29	11,972	-60.9		272	57.5
175----	28	12,810	-60.8		275	63.0
150----	26	13,767	-61.8		272	68.0
125----	23	14,884	-63.7		274	56.7
100----	21	16,238	-65.7		276	47.0
80-----	18	17,592	-66.8		278	34.8
60-----	18	19,340	-64.8		293	19.4
50-----	18	20,461	-61.8		312	8.0
40-----	17	21,853	-57.9		318	4.9
30-----	16	23,691	-52.8		329	4.5
25-----	14	24,874	-50.9		328	3.9
20-----	13	26,344	-48.0		268	.6
15-----	11	28,273	-44.9		67	1.6
10-----						

5/ JACKASS FLATS, NEV. (889 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	6	1,100	17.1			
1,000--	6	82				
950----	6	522				
900----	6	995				
850----	6	1,489	20.9			
800----	6	2,009	17.3			
750----	6	2,553	13.1			
700----	6	3,130	7.9			
650----	6	3,728	2.7			
600----	6	4,377	-3.1			
550----	6	5,047	-8.2			
500----	6	5,792	-13.4			
450----	6	6,572	-19.3			
400----	6	7,451	-25.7			
350----	6	8,404	-33.0			
300----	6	9,470	-41.5			
250----	6	10,681	-51.2			
200----	6	12,101	-59.3			
175----	6	12,937	-59.4			
150----	6	13,904	-58.8			
125----	[illegible]	15,049	-58.9			
100----	6	16,448	-59.9			
80-----	6	17,838	-60.9			
60-----	6	19,636	-57.8			
50-----	6	20,794	-55.0			
40-----	6	22,226	-53.6			
30-----	6	24,085	-51.1			
25-----	6	25,278	-48.8			
20-----	6	26,754	-45.7			
15-----						
10-----						

5/ MERIDA, MEXICO (1001 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	11	22.6	91	98	5.2
1,000--	31	105	23.4	86	102	8.4
950----	31	553	22.2	80	127	15.3
900----	31	1,024	20.5	69	132	11.9
850----	31	1,517	18.5	61	148	7.0
800----	31	2,036	15.7	57	183	2.5
750----	31	2,583	13.3	44	240	1.7
700----	31	3,160	10.1	39	265	2.3
650----	31	3,768	6.1	36	268	2.3
600----	31	4,422	2.0	34	308	5.1
550----	31	5,112	-2.0	27	308	8.4
500----	31	5,872	-6.6		304	10.3
450----	31	6,680	-12.1		292	12.6
400----	31	7,578	-18.3		279	18.8
350----	31	8,562	-25.2		270	26.6
300----	31	9,662	-33.3		264	32.4
250----	31	10,918	-42.6		265	38.3
200----	31	12,388	-54.1		264	43.7
175----	31	13,232	-60.5		260	43.9
150----	31	14,177	-66.8		257	42.6
125----	31	15,262	-72.2		269	34.8
100----	31	16,564	-75.1		276	19.6
80-----	31	17,860	-73.2		343	4.9
60-----	31	19,581	-64.4		101	14.2
50-----	31	20,710	-58.9		92	16.9
40-----	31	22,123	-54.9		86	22.9
30-----	30	23,972	-51.2		84	28.4
25-----	26	25,156	-48.3		87	30.5
20-----	24	26,643	-44.3		90	31.9
15-----	17	28,574	-41.1		87	33.4
10-----	11	31,365	-35.6			

5/ YUCCA FLAT, NEV. (878 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	25	1,196	7.8	31	245	1.4
1,000--	25	97				
950----	25	532				
900----	25	988				
850----	25	1,466	14.4	24	258	2.1
800----	25	1,975	11.4	23	223	5.6
750----	25	2,506	7.5	26	241	5.4
700----	25	3,075	3.7	27	237	6.4
650----	25	3,666	-.5		241	8.0
600----	25	4,307	-4.9		254	12.2
550----	25	4,981	-9.5		261	16.9
500----	25	5,716	-14.3		265	20.0
450----	25	6,502	-20.2		267	24.9
400----	25	7,370	-27.0		272	29.1
350----	25	8,318	-34.1		278	30.9
300----	25	9,378	-42.6		280	35.8
250----	25	10,585	-51.3		284	40.2
200----	25	12,010	-58.3		277	40.2
175----	25	12,846	-59.7		270	45.1
150----	25	13,810	-59.5		275	40.2
125----	25	14,948	-60.5		270	36.5
100----	24	16,329	-61.6		263	25.8
80-----	24	17,715	-60.7		259	13.4
60-----	23	19,522	-57.6		269	1.7
50-----	23	20,677	-56.0		93	5.4
40-----	22	22,107	-54.4		86	6.4
30-----	22	23,958	-52.5		93	5.4
25-----	20	25,147	-50.9		67	7.4
20-----	20	26,606	-49.0		67	7.6
15-----	19	28,509	-45.8		25	2.5
10-----	15	31,224	-42.1			

5/ YUMA, ARIZ. (993 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	105	18.8	32	359	0.6
1,000--	31	73				
950----	31	515	22.4	29	293	7.2
900----	31	986	20.5	25	288	7.4
850----	31	1,476	17.2	26	275	5.1
800----	31	1,989	13.4	30	250	3.7
750----	31	2,522	9.5	28	234	4.1
700----	31	3,097	6.0	25	222	5.8
650----	31	3,697	2.5		247	8.9
600----	31	4,341	-2.0		261	11.5
550----	31	5,023	-6.8		271	15.5
500----	31	5,764	-12.0		274	19.6
450----	31	6,558	-18.3		270	23.1
400----	31	7,429	-25.1		273	26.8
350----	31	8,384	-32.9		273	31.7
300----	31	9,449	-41.6		275	36.5
250----	31	10,661	-51.2		274	41.6
200----	29	12,072	-59.2		277	47.4
175----	25	12,903	-61.2		273	48.8
150----	19	13,841	-60.6		271	48.8
125----	16	14,960	-62.3		263	42.6
100----	13	16,326	-62.6		266	25.5
80-----	12	17,699	-62.0		245	15.3
60-----	12	19,490	-58.0		217	1.7
50-----	12	20,645	-55.6		98	7.0
40-----	12	22,077	-53.1		87	11.5
30-----	12	23,941	-50.5		84	11.9
25-----	12	25,134	-48.8		86	8.2
20-----	8	26,620	-46.0			
15-----						
10-----						

1. December 1959
2. January 1960
3. February 1960
4. March 1960
5. May 1960

Also see reference notes with current data.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun.

DELAYED DATA

Date	Sun's zenith distance								
	A.M.				0.0°	P.M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
MADISON, WIS.									
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Jan. 1960									
4------	----	----	----	----	----	----	S 1.24	----	----
16-----	1.07	1.16	1.26	----	1.35	----	1.23	S 1.12	1.02
19-----	----	----	----	----	----	----	1.25	1.12	1.01
22-----	----	----	----	----	M 1.35	----	M 1.23	M 1.11	----
Averages	1.07	1.16	1.26	0.00	1.35	0.00	1.24	1.12	1.02
BLUE HILL OBS., MASS.									
	Air mass								
	4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
April 1960									
10-----	0.77	0.88	1.01	1.19	----	----	----	----	----
11-----	.88	1.00	1.11	1.26	1.36 ‡ 1.39	-- -	----	----	----
13-----	----	----	----	----	----	1.22	0.98 ‡ 1.00	0.91	0.80
19-----	.77	.88	1.07	1.21	1.42	1.24	1.11	.98	.88
20-----	.76	----	1.03	1.21	1.34	----	----	----	----
29-----	----	----	----	——	1.41	1.20	1.04	.92	----
Averages	0.80	0.92	1.06	1.22	1.40	1.22	1.03	0.94	0.84
OMAHA, NEBR.									
	Air mass								
	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Jan. 1960									
3------	1.09	1.13	1.26	----	----	----	----	----	----
4------	----	----	1.27	----	1.36	----	S 1.14	S 0.91	----
5------	----	----	1.34	----	S 1.43	----	S 1.31	S 1.20	----
6------	1.11	1.18	1.30	----	1.39	----	1.29	----	----
19-----	S 1.07	S 1.16	S 1.26	----	1.43	----	1.27	1.09	0.93
20-----	H 1.01	H 1.09	H 1.21	----	----	----	----	----	----
21-----	S 1.02	S 1.13	S 1.25	----	M 1.37	----	----	----	----
22-----	1.14	1.18	S 1.20	----	S 1.39	----	H 1.19	----	----
Averages	1.07	1.15	1.26	0.00	1.40	0.00	1.24	1.07	0.93

Date	Sun's zenith distance								
	A.M.				0.0°	P.M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
GUAM, M. I.									
	Air mass								
	4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
Jan. 1960									
8-----	----	----	----	----	S 1.42	----	----	----	----
17----	S 0.82	S 0.91	S 1.04	----	----	----	----	----	----
19----	----	----	----	----	----	----	----	----	S 0.80
MADISON, WIS.									
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
May 1960									
2-----	S 0.66	S 0.80	S 0.94	----	----	----	----	----	----
11----	.87	.98	----	----	----	----	----	----	----
12----	S .59	S 1.00	S 1.12	S 1.29	S 1.47	S 1.24	S 1.07	S 0.94	S 0.83
13----	S .78	S .91	S 1.05	S 1.23	S 1.59	S 1.12	----	----	----
14----	----	----	H .83	H 1.02	----	----	----	----	----
15----	----	----	----	----	S 1.38	----	----	----	----
23----	M .67	M .75	S .88	S 1.11	----	----	----	----	----
Averages	0.71	0.89	0.96	1.16	1.48	1.18	1.07	0.94	0.83
OMAHA, NEBR.									
	Air mass								
	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
May 1960									
1-----	S 0.35	S 0.46	S 0.59	S 0.82	S 0.99	----	----	----	----
2-----	----	----	----	----	S 1.01	----	----	----	----
7-----	.51	.62	.77	.94	----	----	----	----	----
8-----	----	----	----	----	1.13	----	----	----	----
10----	----	----	----	----	M I.07	----	----	----	----
11----	----	----	----	----	----	----	S 0.64	S 0.45	S 0.32
12----	S .47	S .56	S .70	S .88	S 1.01	M 0.79	----	----	----
13----	----	----	S .74	S .92	----	----	----	----	----
15----	----	----	----	H .57	----	----	----	----	----
22----	----	----	----	----	S 1.10	M .85	M .62	M .50	M .29
26----	----	----	.72	.94	----	----	----	----	----
27----	M .41	M .47	M .63	M .85	----	M .82	S .67	S .54	S .39
30----	----	----	M .64	M .84	M 1.02	M .74	M .53	----	----
31----	----	----	----	----	----	M .68	M .49	----	----
Averages	0.44	0.53	0.68	0.85	1.05	0.78	0.59	0.50	0.33

* Values corresponding to true solar noon.
H Haze.
S Slight haze - indeterminable.
M Moderate haze - indeterminable.
‡ Interpolated value. (Reference, MANUAL OF RADIATION OBSERVATIONS, Paragraph D2020.4)

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

DELAYED DATA

	Pullman, Wash.		Pullman, Wash.		Pullman, Wash.		Pullman, Wash.		Pullman, Wash.		Pullman, Wash.		Pullman, Wash.		Pullman, Wash.		Pullman, Wash.		Seattle, Wash.		Nanaimo, B. C.	Seattle, Wash.		Nanaimo, B. C.		Nanaimo, B. C.	Seattle, Wash.		Ames, Iowa	Moosonee, Ontario	Nanaimo, B. C.	Seattle, Wash.	Suffield, Alberta		Aklavik, MacKenzie
1955		June		1956 Jan.		Feb.		Mar.		Apr.		May		June		July		1959 July		Aug.			Sep.		Oct.			Nov.						Dec.	
May 7	763	4	641	1	---	5	---	4	---	1	---	6	346	3	---	2	439	2	530	6	609	702	3	218	1	---	380	5	95	77	117	201	224	3	1
May 8	---	5	---	2	---	6	---	5	---	2	---	7	426	4	---	3	678	3	433	7	636	688	4	174	2	---	331	6	294	89	209	158	157	4	0
May 9	---	6	---	3	188	7	---	6	---	3	---	8	---	5	---	4	694	4	721	8	642	699	5	121	3	363	337	7	191	109	184	209	209	5	1
May 10	---	7	---	4	25	8	304	7	---	4	---	9	---	6	---	5	456	5	642	9	572	691	6	385	4	236	211	8	276	91	208	215	192	6	1
May 11	---	8	---	5	159	9	---	8	342	5	---	10	---	7	581	6	749	6	480	10	525	556	7	(111)	5	306	110	9	291	114	114	31	143	7	1
May 12	---	9	---	6	137	10	---	9	253	6	---	11	---	8	---	7	809	7	654	11	410	371	8	505	6	340	176	10	204	128	174	152	118	8	0
May 13	---	10	---	7	---	11	---	10	330	7	---	12	---	9	780	8	790	8	618	12	615	524	9	477	7	311	175	11	325	94	39	44	90	9	---
Average	---		---		127		---		---		---		---		---		659		583		573	604		(284)		311	246		239	100	149	144	162		1
May 14	---	11	---	8	104	12	---	11	487	8	---	13	---	10	593	9	812	9	775	13	563	533	10	464	8	180	66	12	97	83	137	197	194	10	---
May 15	---	12	---	9	180	13	---	12	465	9	---	14	---	11	818	10	707	10	753	14	223	523	11	420	9	199	252	13	148	154	122	176	197	11	---
May 16	---	13	---	10	83	14	171	13	404	10	---	15	---	12	711	11	585	11	777	15	489	385	12	451	10	294	115	14	---	57	48	182	99	12	---
May 17	---	14	---	11	182	15	---	14	421	11	488	16	782	13	685	12	749	12	475	16	286	143	13	296	11	229	206	15	---	152	159	---	179	13	---
May 18	---	15	705	12	---	16	---	15	478	12	---	17	768	14	---	13	474	13	612	17	331	362	14	418	12	73	145	16	---	119	---	---	190	14	---
May 19	---	16	825	13	---	17	---	16	392	13	621	18	758	15	---	14	762	14	786	18	591	408	15	220	13	49	108	17	---	116	---	---	78	15	---
May 20	---	17	---	14	---	18	---	17	506	14	---	19	410	16	402	15	780	15	774	19	594	371	16	187	14	118	85	18	---	70	31	---	74	16	---
Average	---		---		137		---		450		---		679		642		695		707		440	389		351		163	140		---	107	99	---	145		---
May 21	---	18	748	15	---	19	---	18	429	15	---	20	---	17	555	16	715	16	772	20	609	540	17	423	15	56	274	19	---	109	19	---	107	17	---
May 22	---	19	---	16	---	20	---	19	303	16	---	21	---	18	---	17	---	17	750	21	---	214	18	103	16	95	244	20	228	155	20	---	69	18	---
May 23	---	20	---	17	100	21	---	20	263	17	---	22	---	19	169	18	---	18	754	22	---	292	19	179	17	317	294	21	153	88	125	---	90	19	---
May 24	249	21	---	18	40	22	---	21	273	18	---	23	---	20	556	19	773	19	762	23	---	473	20	157	18	288	145	22	309	53	5	---	47	20	---
May 25	---	22	---	19	70	23	---	22	---	19	---	24	---	21	833	20	526	20	737	24	(570)	580	21	149	19	299	97	23	193	49	30	---	120	21	---
May 26	342	23	---	20	159	24	226	23	---	20	641	25	---	22	776	21	716	21	741	25	352	542	22	376	20	198	85	24	65	49	39	---	115	22	---
May 27	---	24	167	21	64	25	---	24	---	21	583	26	---	23	561	22	774	22	727	26	431	132	23	272	21	103	41	25	118	28	150	---	102	23	---
Average	---		---		86		---		317		---		---		575		701		749		(491)	396		237		194	168		178	76	56	---	93		---
May 28	---	25	541	22	120	26	---	25	---	22	---	27	---	24	820	23	785	23	234	27	(411)	452	24	52	22	143	18	26	---	52	121	164	120	24	---
May 29	---	26	---	23	---	27	---	26	---	23	---	28	---	25	775	24	759	24	335	28	265	510	25	125	23	56	83	27	---	110	120	136	142	25	---
May 30	---	27	---	24	---	28	---	27	---	24	---	29	---	26	---	25	710	25	716	29	474	---	26	338	24	183	54	28	---	118	39	74	103	26	---
May 31	558	28	---	25	---	29	191	28	---	25	---	30	---	27	843	26	759	26	740	30	323	---	27	412	25	---	217	29	---	85	84	50	125	27	---
June 1	622	29	---	26	---	Mar. 1	---	29	---	26	---	31	---	28	---	27	764	27	226	31	439	218	28	359	26	---	213	30	---	44	39	119	126	28	---
June 2	650	30	---	27	---	2	---	30	---	27	---	June 1	---	29	628	28	718	28	---	Sep. 1	479	476	29	159	27	133	43	Dec. 1	---	50	64	54	105	29	---
June 3	681	July 1	---	28	---	3	--	31	--	28	---	2	---	30	753	29	757	29	634	2	439	540	30	(348)	28	255	160	2	---	37	55	9	128	30	---
														July 1	756																			31	---
Average	628		---		---		--		---		---		---				750		481		(404)	439		(256)		154	113		---	71	74	87	121		
														Avg.	762																				---
				29	---					29	---					30	769	30	634						29	217	215								
				30	---					30	---					31	738	31	666						30	76	147								
				31	---					May 1	---					Aug. 1	243	Aug. 1	479						31	126	208								
				Feb. 1	--					2	268					2	420	2	423						Nov. 1	156	169								
				2	268					3	335					3	462	3	585						2	73	73								
				3	---					4	---					4	747	4	251						3	209	87								
				4	---					5	585					5	741	5	653						4	219	250								
				Avg.	---						--						589		527							154	164								

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface tabulated in langleys.

1959	Dartmouth N. S.	Edmonton, Alberta	Lemont, Ill	Moosonee, Ontario	Nanaimo, B. C.	Normandin, Quebec	Ottawa, Ontario	S.Ste. Marie, Mich.	Seattle, Wash.	Scarboro, Ontario	Suffield, Alberta	Toronto, Ontario	Vancouver, B. C.	Winnipeg, Manitoba
Dec. 3-----	88	82	194	54	118	---	58	201	83	125	122	115	107	104
Dec. 4-----	58	90	105	17	49	---	83	61	97	153	72	151	86	64
Dec. 5-----	113	63	86	52	89	29	62	54	15	82	93	76	73	107
Dec. 6-----	22	48	78	59	4	27	65	56	23	13	91	16	17	55
Dec. 7-----	19	83	202	29	82	21	14	149	79	38	122	46	71	126
Dec. 8-----	66	52	211	54	57	86	116	158	88	176	111	168	63	101
Dec. 9-----	173	59	179	54	36	92	77	92	29	148	72	169	35	132
Average-------	77	68	151	46	62	51	68	110	59	105	97	106	65	98
Dec. 10-----	117	70	119	41	12	87	139	166	14	171	90	174	11	64
Dec. 11-----	161	29	11	95	70	81	173	47	57	63	58	63	60	112
Dec. 12-----	66	48	12	106	111	59	37	148	80	16	95	13	113	36
Dec. 13-----	14	92	183	51	30	34	176	125	55	197	111	203	39	81
Dec. 14-----	51	19	78	29	13	---	181	25	24	163	38	164	7	49
Dec. 15-----	151	36	147	27	69	---	61	23	14	56	73	57	44	99
Dec. 16-----	84	90	142	48	83	---	130	56	107	147	70	140	109	130
Average-------	92	55	99	57	55	65	128	84	50	116	76	116	55	82
Dec. 17-----	115	67	108	82	35	---	123	84	66	177	102	182	48	52
Dec. 18-----	175	20	212	52	---	---	125	76	84	154	115	140	62	109
Dec. 19-----	89	80	212	60	---	---	130	136	92	191	111	199	41	130
Dec. 20-----	157	78	80	63	---	---	175	125	35	163	78	113	87	67
Dec. 21-----	154	51	217	95	---	---	156	92	56	58	83	69	54	37
Dec. 22-----	41	53	101	75	---	---	179	129	80	188	111	190	51	69
Dec. 23-----	70	64	38	107	---	---	180	112	39	84	91	104	17	56
Average-------	115	59	138	76	---	---	153	108	65	145	99	143	52	74
Dec. 24-----	170	72	108	105	---	---	(180)	65	43	146	102	134	17	50
Dec. 25-----	184	33	66	55	---	---	39	166	86	43	120	36	---	25
Dec. 26-----	101	92	20	89	---	---	168	14	126	13	107	13	---	9
Dec. 27-----	156	59	11	73	---	---	54	26	40	12	132	12	---	---
Dec. 28-----	39	75	31	115	---	---	121	70	104	---	121	16	82	76
Dec. 29-----	18	46	68	84	---	---	53	79	60	33	105	36	32	119
Dec. 30-----	65	29	100	96	---	---	88	96	40	102	45	79	37	122
Dec. 31-----	68	33	110	107	---	---	164	165	139	190	68	191	110	63
Average-------	100	55	64	91	---	---	(108)	85	80	77	100	65	56	66

1960 Jan.	Lemont, Ill	Mar.	Manhattan, Kans.	Apr.	Blue Hill Obs. Mass.	Boston, Mass.	Lemont, Ill.	May	Boston, Mass.	Lemont, Ill
1	154	4	441	1	---	48	246	6	667	118
2	39	5	367	2	---	409	519	7	634	252
3	62	6	160	3	---	264	75	8	185	250
4	219	7	331	4	---	273	125	9	229	124
5	200	8	30	5	41	37	472	10	651	112
6	137	9	318	6	437	385	482	11	130	453
7	127	10	85	7	353	367	612	12	467	750
	134		248		---	255	361		423	294
8	235	11	504	8	198	174	429	13	101	731
9	73	12	365	9	250	241	397	14	512	709
10	38	13	287	10	(591)	580	633	15	247	658
11	75	14	124	11	590	591	309	16	---	193
12	4	15	93	12	407	426	608	17	570	196
13	64	16	454	13	504	556	469	18	207	608
14	9	17	367	14	532	538	89	19	673	128
	71		313		(439)	444	419		385	461
15	113	18	399	15	341	402	345	20	582	246
16	250	19	423	16	292	181	238	21	609	250
17	50	20	376	17	413	366	63	22	427	493
18	88	21	645	18	312	293	607	23	179	624
19	201	22	673	19	660	655	631	24	48	677
20	176	23	535	20	629	568	494	25	141	536
21	256	24	448	21	575	568	651	26	508	517
	162		500		460	433	433		356	478
22	272	25	481	22	545	545	612	27	700	334
23	283	26	531	23	109	90	535	28	700	358
24	200	27	493	24	94	65	451	29	701	398
25	162	28	488	25	274	198	466	30	578	580
26	98	29	119	26	478	499	622	31	104	680
27	18	30	505	27	107	67	653	Jun.1	262	650
28	71	31	516	28	514	595	568	2	565	748
Avg.	158		448		303	281	558		516	538
29	38			29	650	656	180			
30	75			30	543	660	119			
31	179			May 1	138	122	677			
Feb.1	59			2	682	690	671			
2	257			3	660	660	693			
3	242			4	659	642	620			
4	79			5	683	679	298			
Avg.	133				588	587	466			

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

CORRECTED AND DELAYED DATA

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
January 1959																															
Bismarck, N. Dak.	---	440	---	403	341	331	307	330	273	---	334	253	---	334	412	---	363	---	---	408	408	---	339	281	355	354	340	---	---	446	490
Caribou, Me.	350	---	348	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	391	371	310	---	392	388	356	371	385	372	342	- -	426
Green Bay, Wis.	---	---	---	---	---	---	---	349	400	374	385	---	---	---	---	---	447	---	378	---	---	---	---	---	---	---	---	---	---	---	458
Mauna Loa, Hawaii	246	247	251	256	256	258	258	---	---	254	249	243	244	---	260	258	---	---	---	243	243	243	243	252	248	242	252	254	256	255	260
Washington, D.C. (U)	---	291	285	318	354	352	---	345	397	415	432	371	333	291	294	---	400	374	---	---	264	302	337	351	308	---	---	337	---	---	290
February 1959																															
Bismarck, N. Dak.	483	396	---	---	455	---	369	410	---	435	425	401	---	386	---	---	340	435	430	381	380	399	397	394	411	---	405	393			
Caribou, Me.	411	---	466	---	394	431	389	---	376	364	354	---	390	382	---	---	407	---	---	---	---	---	---	---	392	386	376	351			
Green Bay, Wis.	---	466	---	---	416	444	---	372	---	---	435	---	---	---	---	420	---	---	---	419	378	363	411	389	396	416	---	---			
Mauna Loa, Hawaii	270	270	261	257	256	---	254	251	---	---	---	---	256	257	258	256	261	263	261	267	268	275	281	273	274	274	271	269			
Washington, D.C. (U)	329	364	330	---	328	368	338	337	---	302	317	335	341	---	310	347	336	---	382	390	375	351	363	335	318	344	330	333			
March 1959																															
Bismarck, N. Dak.	384	470	---	453	428	434	441	401	443	---	---	---	424	440	429	407	382	381	382	397	351	375	376	381	398	377	375	396	395	---	457
Caribou, Me.	---	366	395	---	445	---	---	---	475	457	442	---	---	---	408	---	418	419	---	379	---	---	415	413	391	446	425	439	421	399	402
Green Bay, Wis.	396	---	---	454	---	---	479	---	400	462	---	---	---	---	---	---	448	392	384	380	434	361	368	404	382	---	391	379	---	374	--
Mauna Loa, Hawaii	269	272	265	275	272	274	275	268	267	272	281	283	270	269	271	277	276	276	298	281	269	273	271	271	271	279	284	301	301	280	274
Washington, D.C. (U)	338	371	343	371	360	338	382	383	---	413	402	397	434	367	---	344	372	413	368	327	344	352	330	344	359	334	---	---	---	---	- -
April 1959																															
Bismarck, N. Dak.	375	417	385	370	358	337	373	---	448	418	452	368	368	363	378	375	---	382	---	394	409	366	357	411	392	---	388	429	---	370	
Caribou, Me.	385	---	---	---	428	---	---	379	331	334	---	---	410	---	---	---	---	392	396	374	411	415	428	382	376	365	400	386	---	---	
Green Bay, Wis.	---	---	---	---	397	368	354	---	340	462	461	450	381	374	371	384	---	---	---	---	414	407	371	394	---	---	---	405	440	420	
Mauna Loa, Hawaii	---	---	---	288	285	279	---	---	---	---	---	---	280	285	283	---	---	---	---	---	---	---	275	283	291	287	287	279	273	---	
May 1959																															
Bismarck, N. Dak.	355	---	333	---	---	---	406	399	359	---	402	393	379	367	371	370	369	380	---	---	387	360	362	341	348	---	---	---	343	403	376
Caribou, Me.	---	---	---	---	372	362	---	394	430	378	---	---	---	---	---	---	---	---	---	---	---	---	---	---	373	371	351	344	- -	345	351
Green Bay, Wis.	366	352	---	344	319	271	369	389	367	370	375	367	332	---	439	452	395	---	351	---	322	323	---	348	---	299	326	---	335	---	318

See reference notes with current data.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

CORRECTED AND DELAYED DATA

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
May 1959																															
Mauna Loa, Hawaii	278	282	291	288	287	---	---	---	---	---	---	---	---	298	---	---	---	---	---	---	---	296	301	---	---	---	---	---	---	---	---
June 1959																															
Bismarck, N. Dak.	356	336	345	334	314	312	330	340	336	326	344	298	322	304	303	318	275	304	304	305	---	321	313	---	319	303	339	387	336	---	
Caribou, Me.	---	324	348	363	362	361	---	---	---	358	326	344	---	---	---	---	---	---	---	---	---	---	389	422	379	---	---	---	---	318	
Ft. Worth, Tex.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	373	349	357	359	
Green Bay, Wis.	335	358	376	355	356	346	340	329	354	342	---	350	347	339	355	335	317	340	334	328	313	335	346	---	318	313	296	---	311	---	
Mauna Loa, Hawaii	---	301	295	---	306	304	---	---	305	305	300	---	292	291	---	---	---	---	294	290	284	---	---	---	295	---	---	---	---	---	
July 1959																															
Bismarck, N. Dak.	348	340	328	364	345	316	314	398	377	365	352	361	354	---	314	322	316	332	318	334	317	335	322	307	307	299	301	302	303	299	306
Caribou, Me.	316	---	---	342	361	337	380	357	312	313	319	307	311	---	---	---	---	---	---	---	333	315	321	322	---	322	320	305	---	311	---
Ft. Worth, Tex.	359	357	347	342	346	341	349	346	341	347	356	364	364	---	348	356	345	---	---	---	335	319	332	335	332	---	340	351	342	332	340
Green Bay, Wis.	347	351	337	327	358	361	322	323	366	---	388	364	356	358	340	344	---	310	360	324	327	337	---	328	323	319	309	---	308	300	304
Mauna Loa, Hawaii	295	290	290	289	293	---	---	293	292	287	---	286	285	286	---	---	284	288	284	288	289	291	292	280	276	276	283	283	289	293	290
Silver Hill, Md.	337	347	336	342	331	---	360	336	329	---	---	---	333	---	341	376	358	339	353	338	339	325	---	327	346	330	341	341	325	317	320
September 1959																															
Bismarck, N. Dak.	---	---	---	---	---	---	---	---	---	---	273	281	267	261	---	300	304	---	---	326	---	---	299	289	317	308	319	---	---	---	
Caribou, Me.	---	---	---	303	310	303	295	286	282	289	306	295	370	---	371	---	377	365	340	321	---	---	---	---	295	295	---	281	281	254	
Ft. Worth, Tex.	300	---	---	307	298	305	305	310	304	310	307	316	315	---	322	311	304	342	307	299	290	301	---	---	274	291	287	294	282	---	
Green Bay, Wis.	---	---	328	307	298	289	292	284	295	293	263	288	283	300	---	---	---	---	---	---	---	---	---	289	---	---	328	345	288	---	
Silver Hill, Md.	282	288	299	303	326	328	---	323	318	325	323	315	314	321	325	---	336	348	334	324	312	316	311	308	310	---	293	295	---	---	
October 1959																															
Bismarck, N. Dak.	327	359	286	295	307	276	---	---	---	---	311	---	314	290	---	329	277	255	257	249	283	294	---	291	298	287	---	291	---	---	284
Caribou, Me.	---	282	252	---	237	273	---	---	---	286	246	321	314	330	326	299	---	353	356	---	328	286	---	---	---	---	---	311	278	290	---
Ft. Worth, Tex.	---	---	---	---	291	268	288	285	302	298	277	284	---	292	299	281	292	294	282	281	273	276	274	268	273	279	---	286	---	---	---
Green Bay, Wis.	285	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	289	277	257	251	---	---	---	---	---	---	---	---	250	---	---
Silver Hill, Md.	---	---	---	272	267	274	272	---	---	276	288	286	---	---	290	269	287	292	291	286	---	---	292	---	---	292	296	290	287	268	---

See reference notes with current data.

TOTAL OZONE DATA

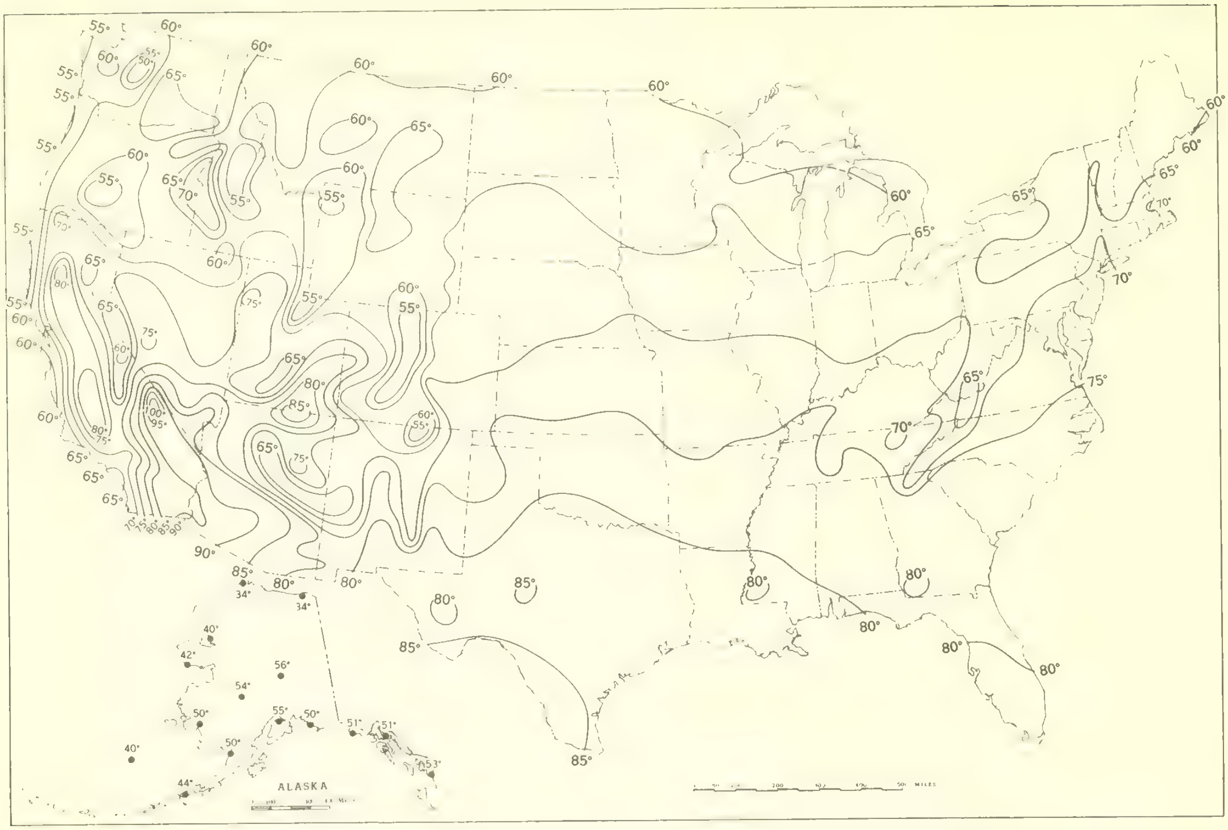
Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

CORRECTED AND DELAYED DATA

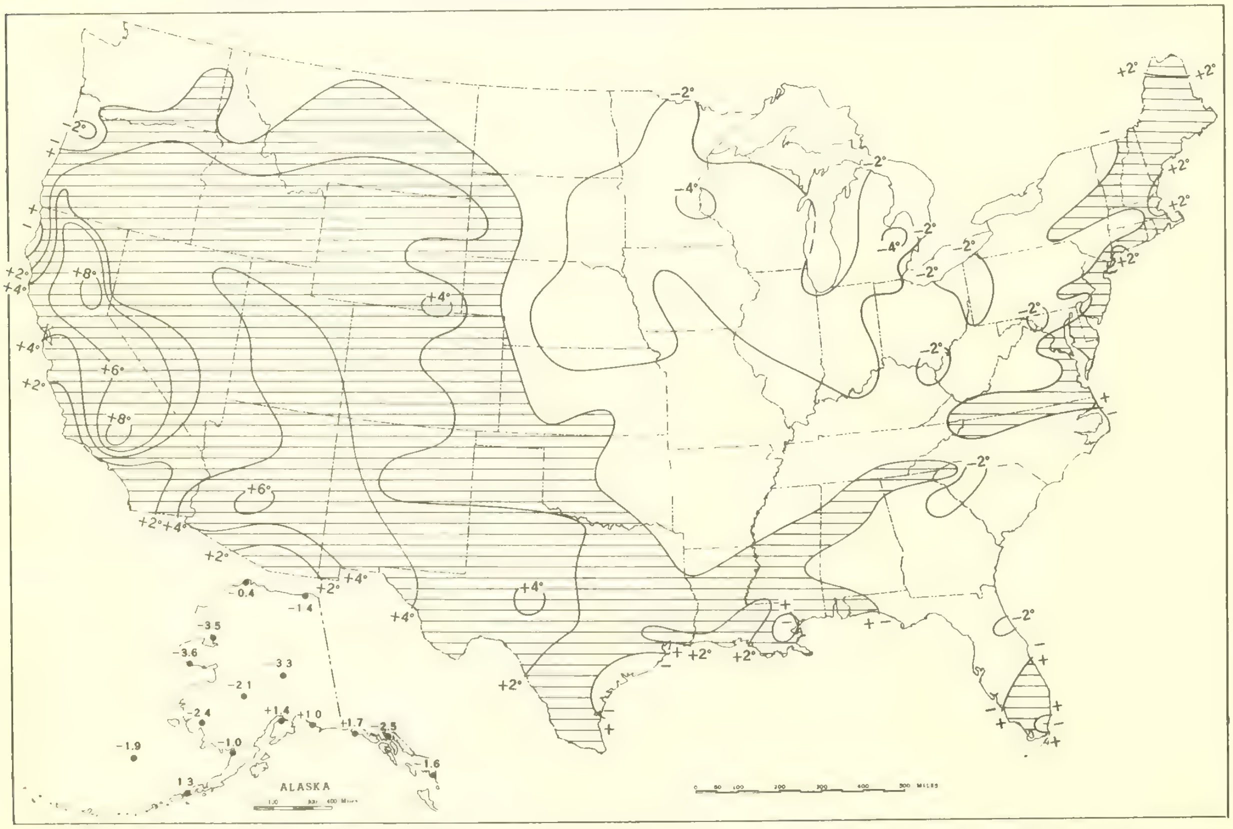
Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
November 1959																															
Bismarck, N. Dak.	266	274	---	---	---	311	342	---	---	---	---	---	---	---	---	398	---	263	---	---	290	---	311	---	---	---	---	274	---	---	
Caribou, Me.	---	371	---	---	---	---	---	---	---	302	297	---	---	---	330	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Ft. Worth, Tex.	---	---	---	287	290	302	292	307	293	---	303	305	---	---	---	297	290	276	277	284	301	296	309	305	292	---	327	321	285	299	
Green Bay, Wis.	304	289	---	---	---	292	---	324	329	---	338	332	---	343	---	---	393	296	270	---	---	---	---	---	---	---	---	355	---	276	
Silver Hill, Md.	---	328	298	---	---	---	---	284	291	330	---	356	337	319	---	---	---	314	300	295	---	312	292	---	357	296	---	---	385	289	
December 1959																															
Bismarck, N. Dak.	---	---	289	353	386	---	---	344	323	---	293	327	---	346	---	---	---	---	---	---	---	387	---	345	---	---	---	---	---	---	---
Caribou, Me.	310	300	---	271	278	---	---	---	---	---	326	---	---	---	---	---	281	247	324	---	---	---	---	---	---	---	373	---	---	---	---
Ft. Worth, Tex.	307	333	297	284	303	332	291	287	---	---	315	302	284	---	---	---	---	292	293	---	306	---	---	---	---	---	---	324	322	334	---
Green Bay, Wis.	---	318	---	---	---	---	288	350	323	314	---	---	307	---	---	---	---	---	326	353	390	---	---	---	---	---	---	---	380	---	368
Silver Hill, Md.	303	323	321	299	---	---	443	295	332	322	321	---	345	318	320	334	---	---	290	312	373	---	370	---	---	---	334	---	---	374	---
January 1960																															
Bismarck, N. Dak.	---	---	---	---	---	---	360	---	---	308	308	---	339	317	---	---	---	---	---	350	---	---	---	419	433	---	405	---	---	337	---
Caribou, Me.	401	---	---	---	403	---	---	---	---	---	348	341	333	366	---	---	---	332	---	---	---	---	---	385	---	---	---	410	---	433	---
Ft. Worth, Tex.	---	306	---	---	---	---	289	284	---	277	---	282	---	266	273	---	298	319	---	345	325	332	---	357	---	---	304	347	353	302	---
Green Bay, Wis.	---	---	---	---	---	337	---	356	---	---	---	---	---	---	299	321	---	---	---	397	---	---	---	---	---	---	---	---	---	347	---
Silver Hill, Md.	344	---	---	---	---	306*	---	315	326	343	355	343*	319	310*	---	323	298	---	350	363	387	438	435	---	448	434	388	393	---	392	396*
February 1960																															
Silver Hill, Md.	376	372	382	323	299	351	453	381	365	324	331	312	---	---	343	386	388	399	364	404	393*	399	381	375	---	374	417	433*	453		

See reference notes with current data.

Chart I. A. Average Temperature (°F.) at Surface, June 1960.



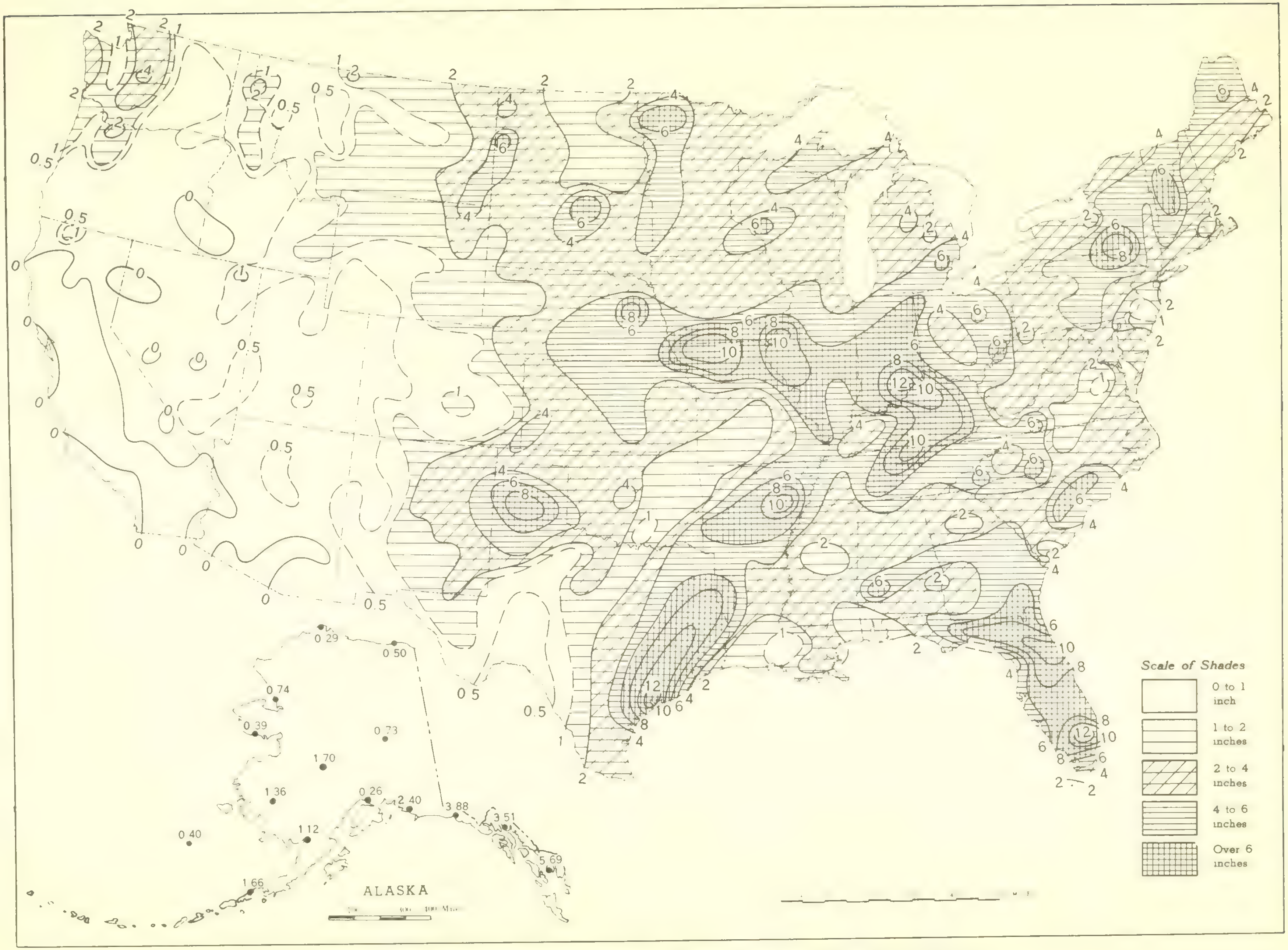
B. Departure of Average Temperature from Normal (°F.), June 1960.



A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

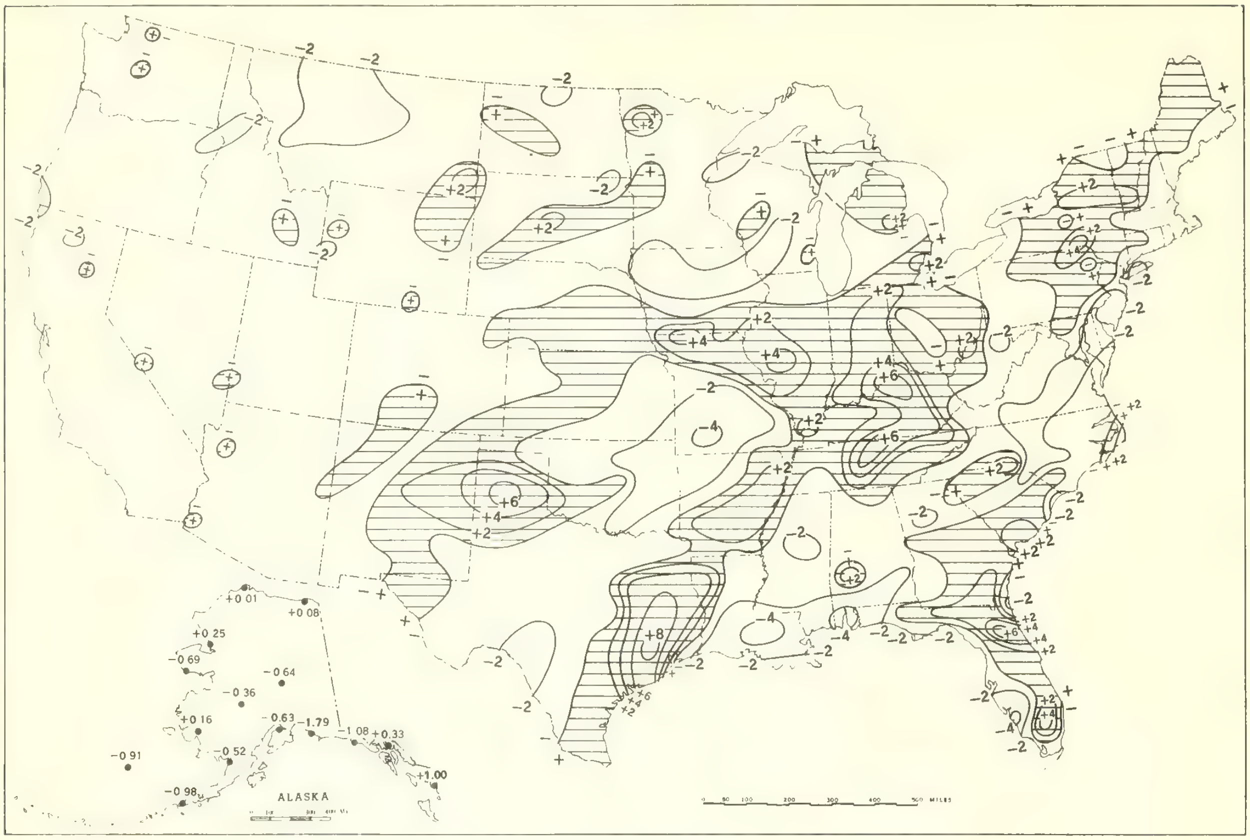
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), June 1960.

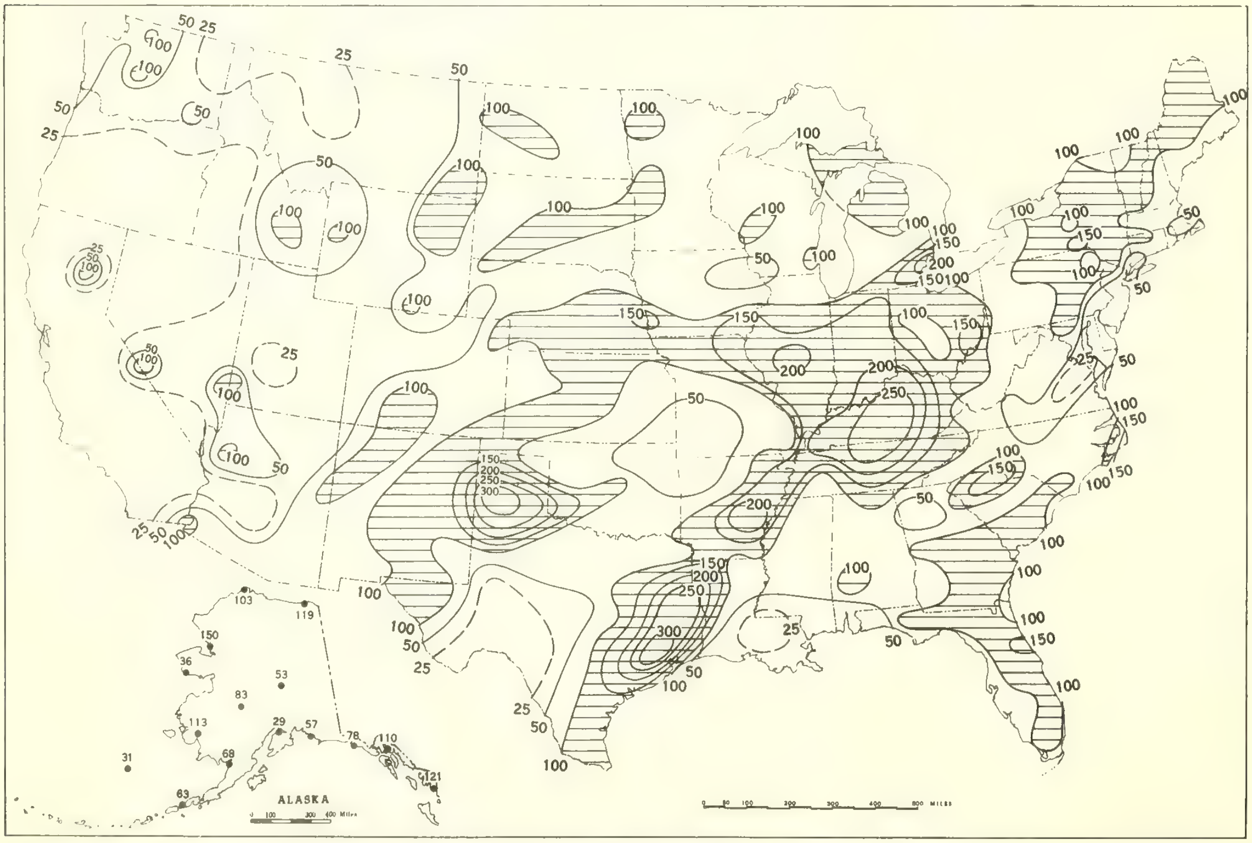


Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), June 1960.

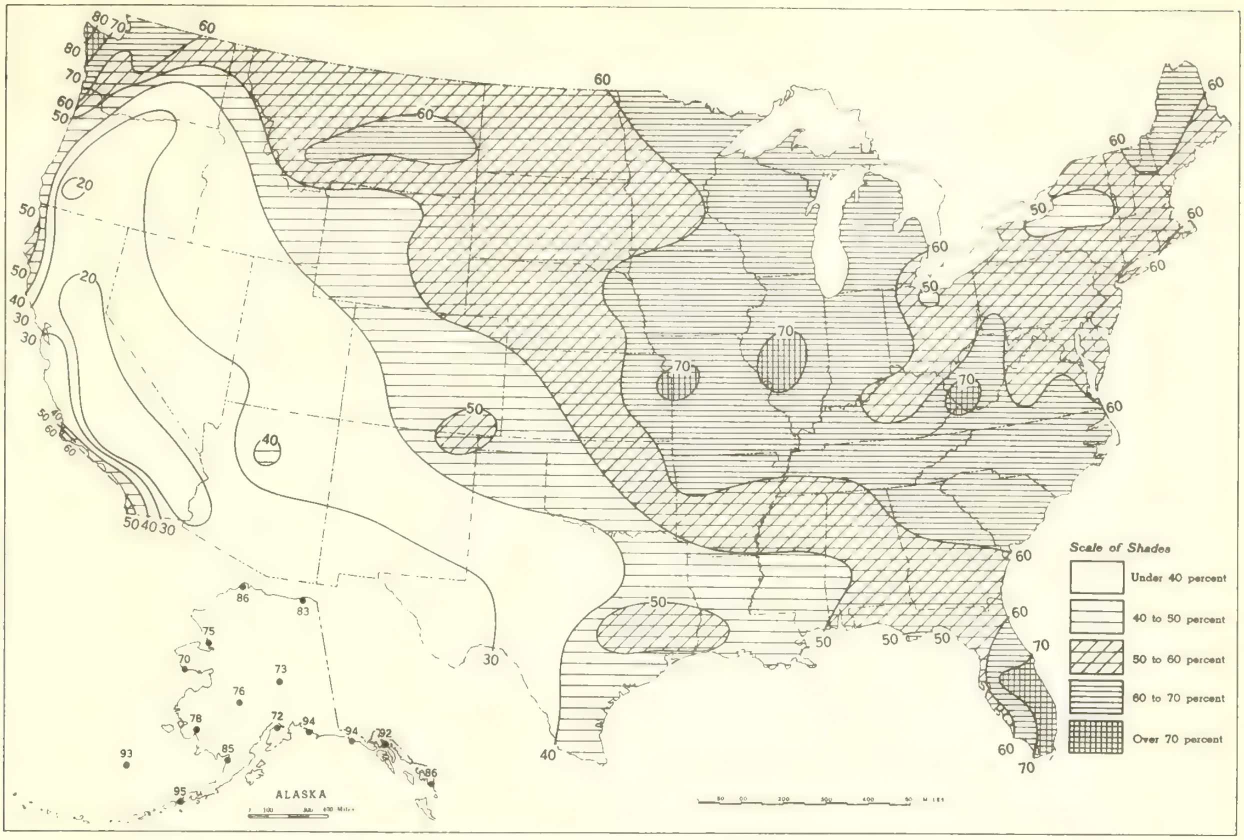


B. Percentage of Normal Precipitation, June 1960.

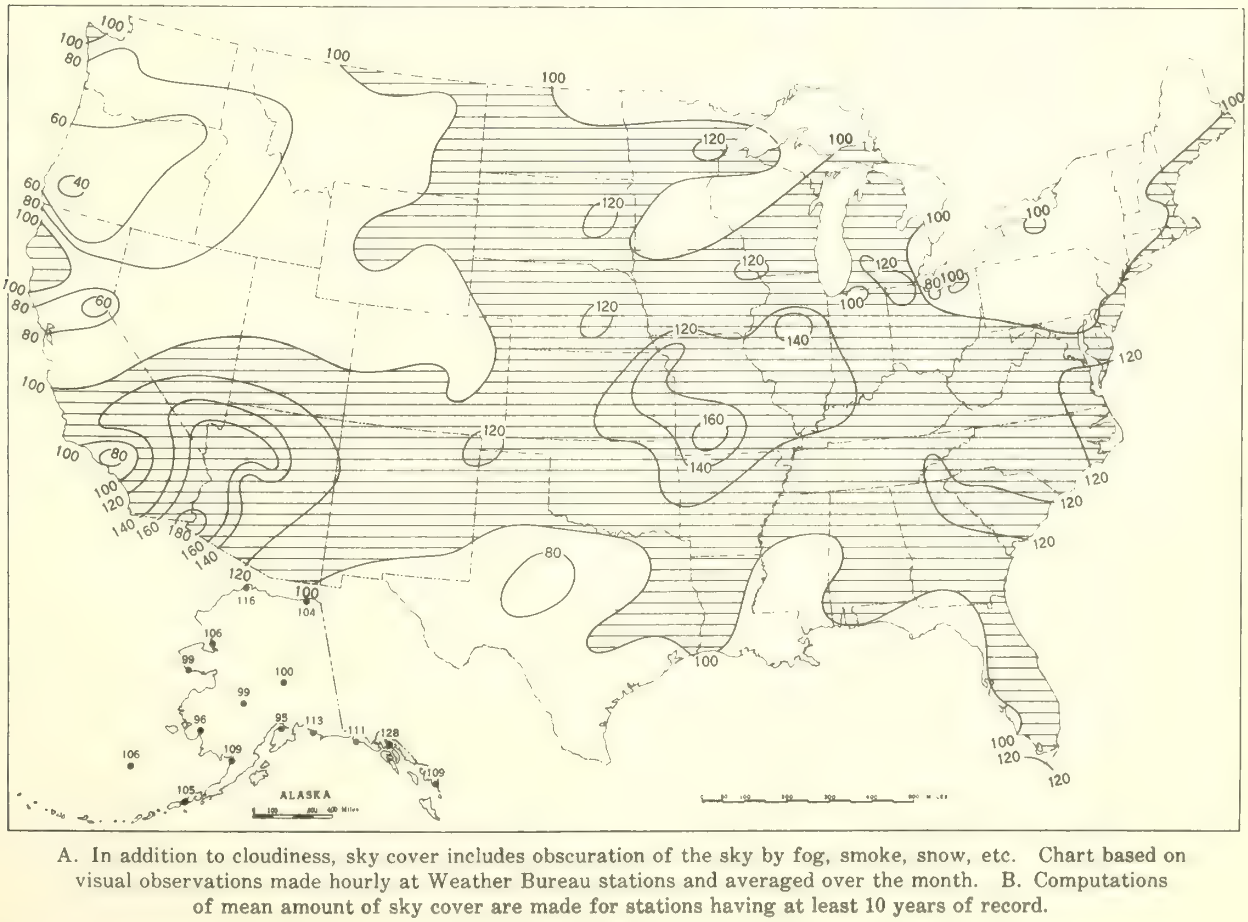


Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, June 1960.

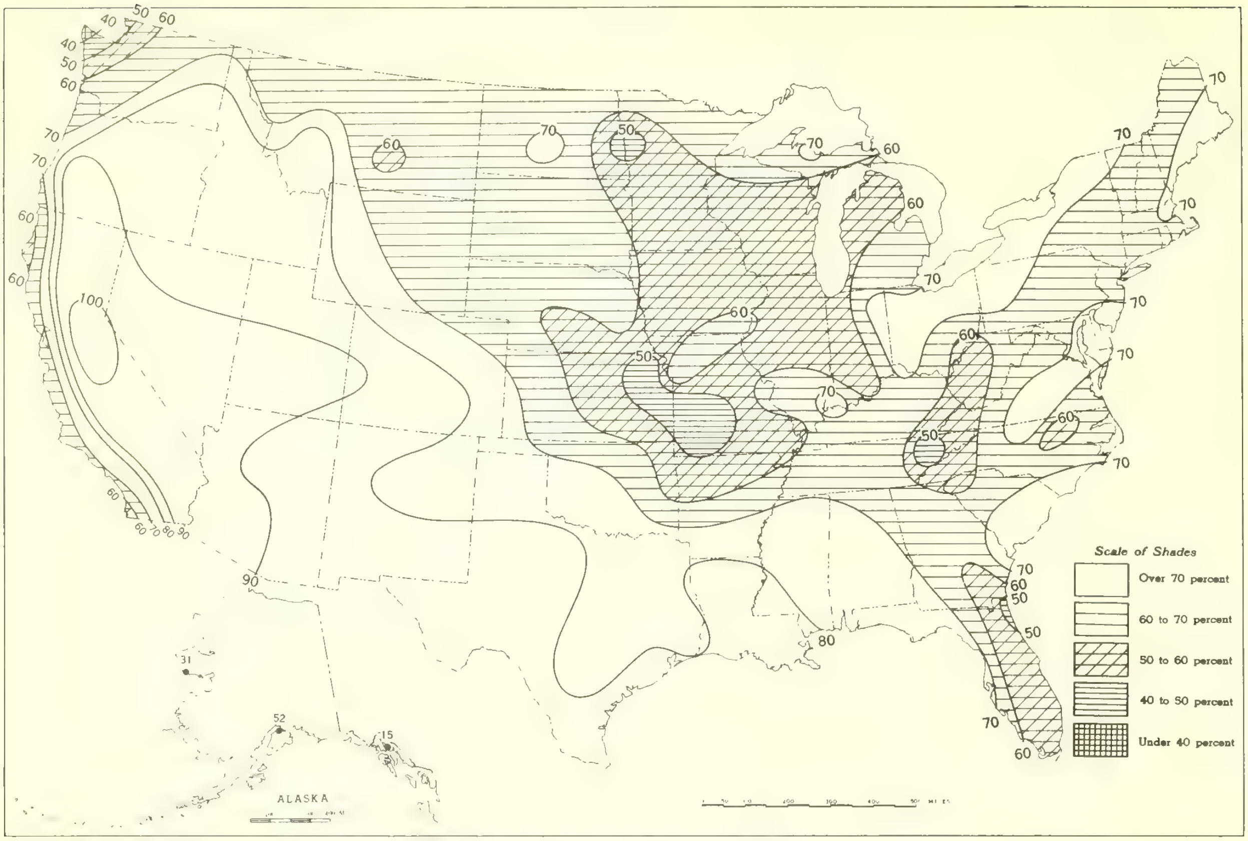


B. Percentage of Mean Monthly Sky Cover Between Sunrise and Sunset, June 1960.

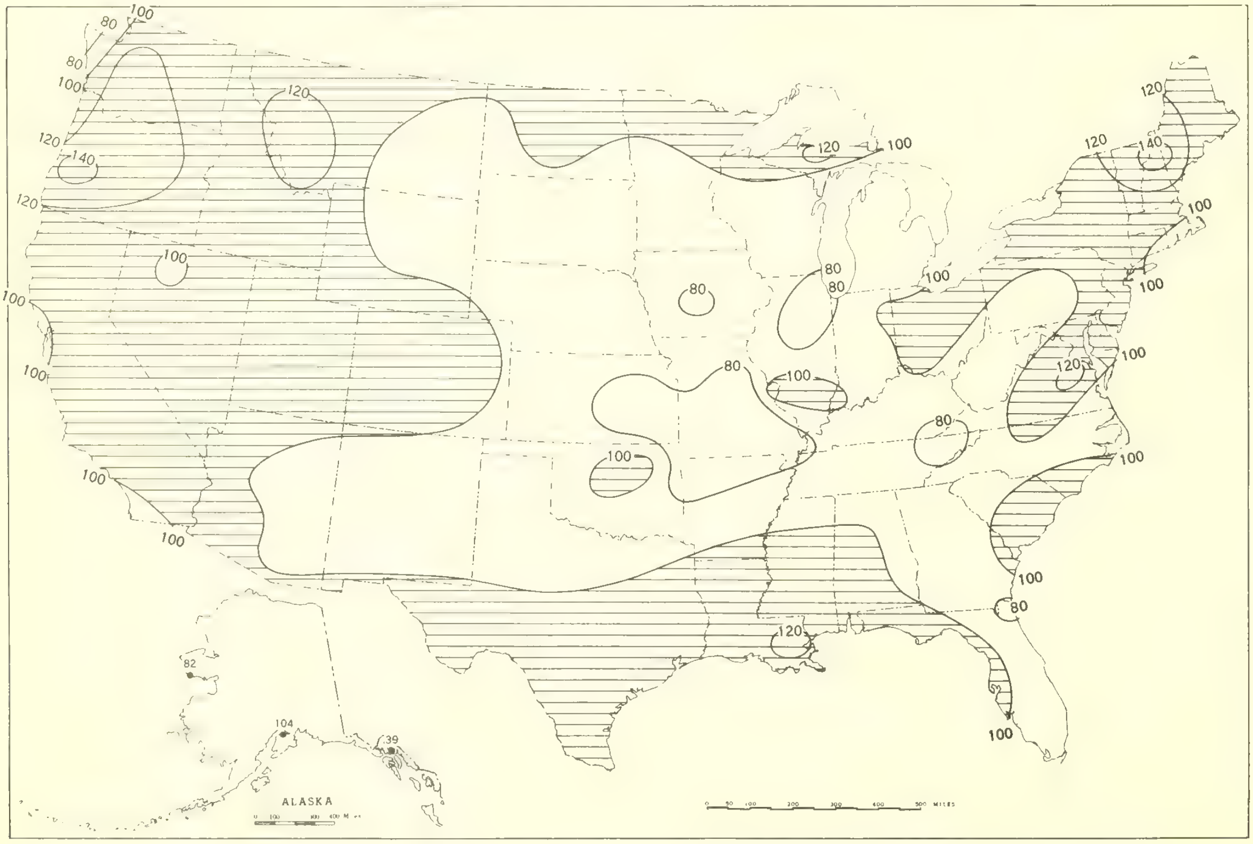


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of mean amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, June 1960.

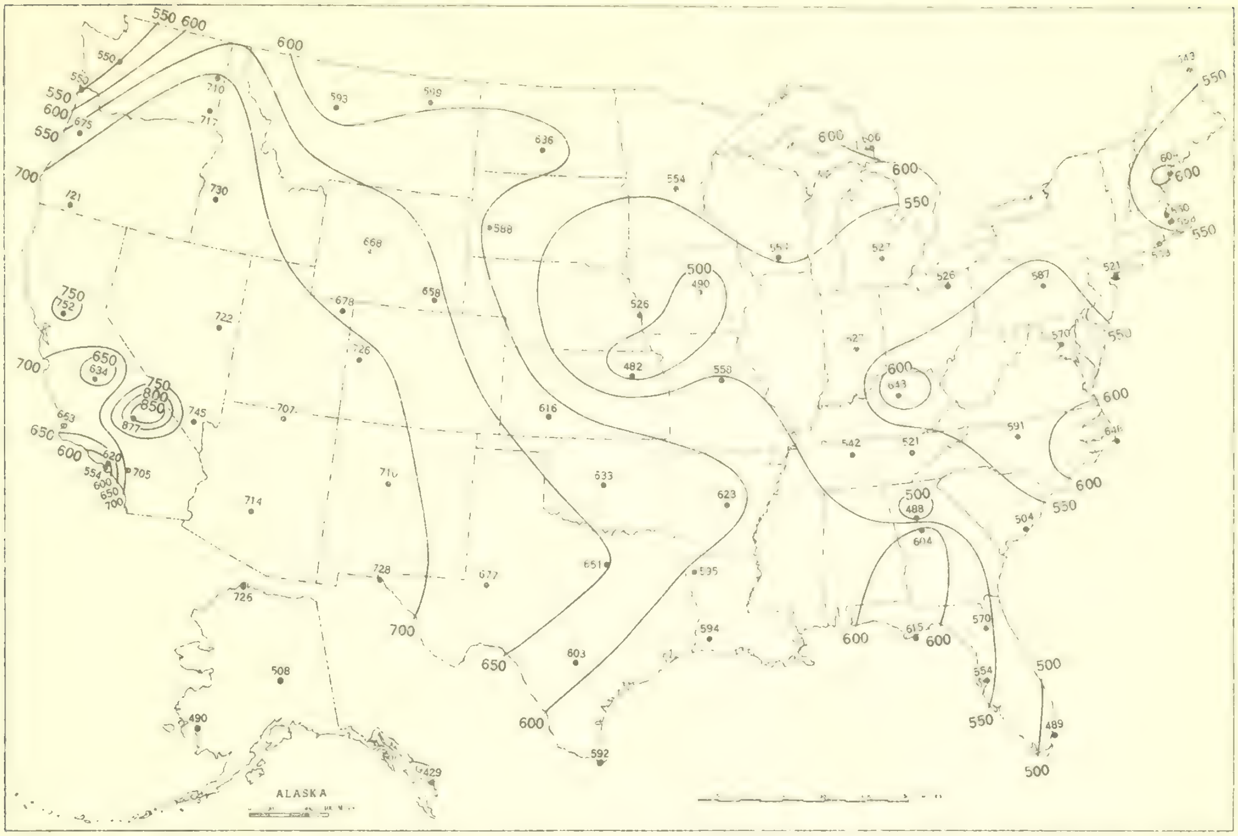


B. Percentage of Mean Monthly Sunshine, June 1960.

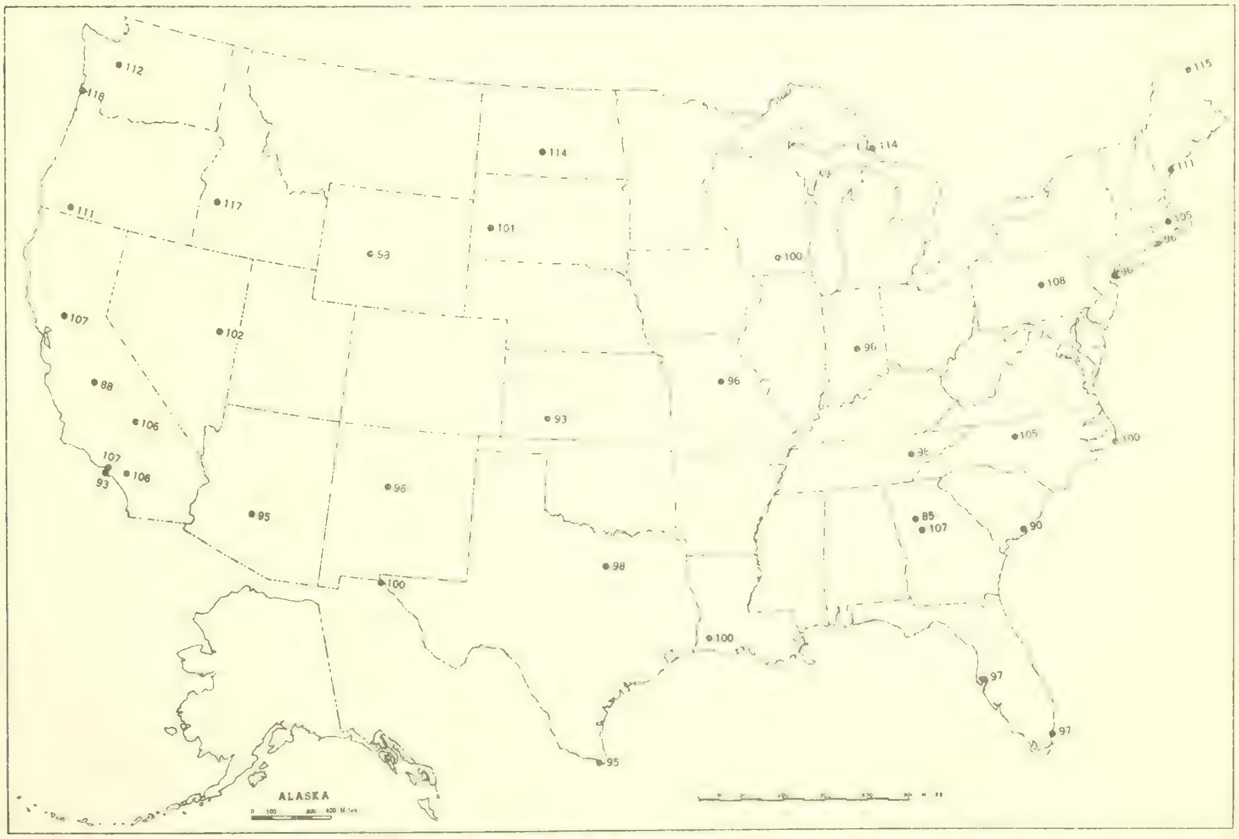


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, June 1960.



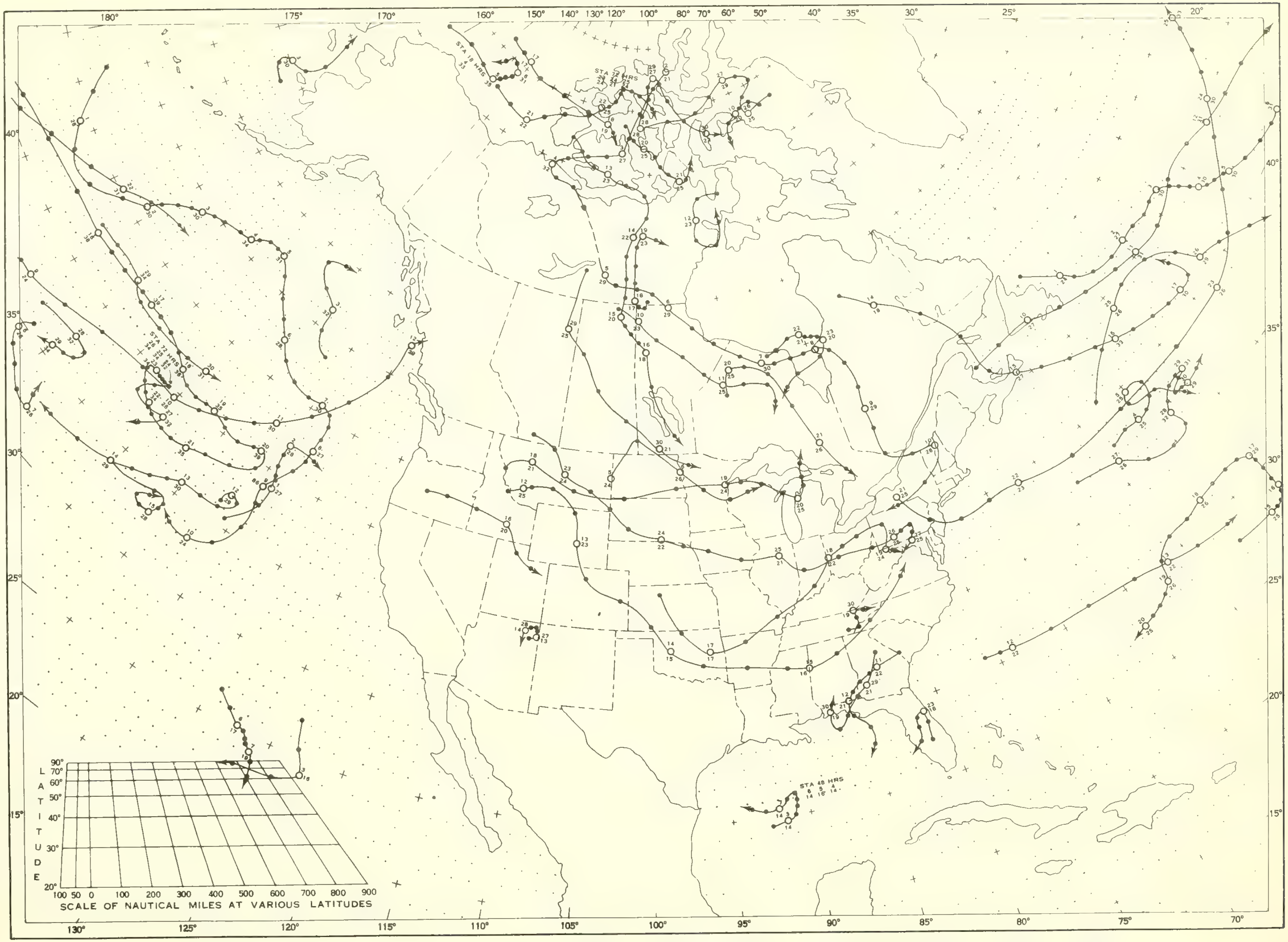
B. Percentage of Mean Daily Solar Radiation, June 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

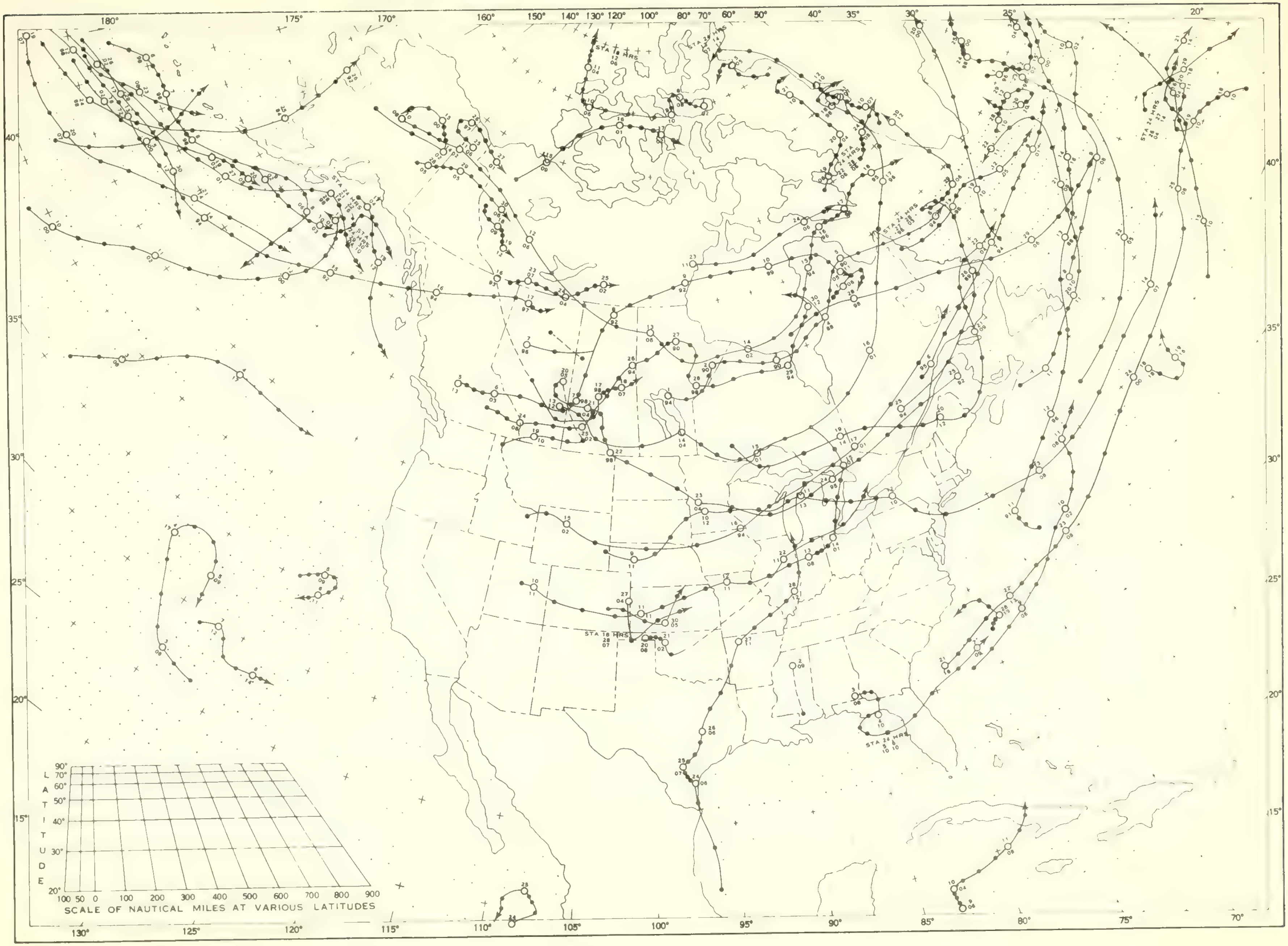
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, June 1960.



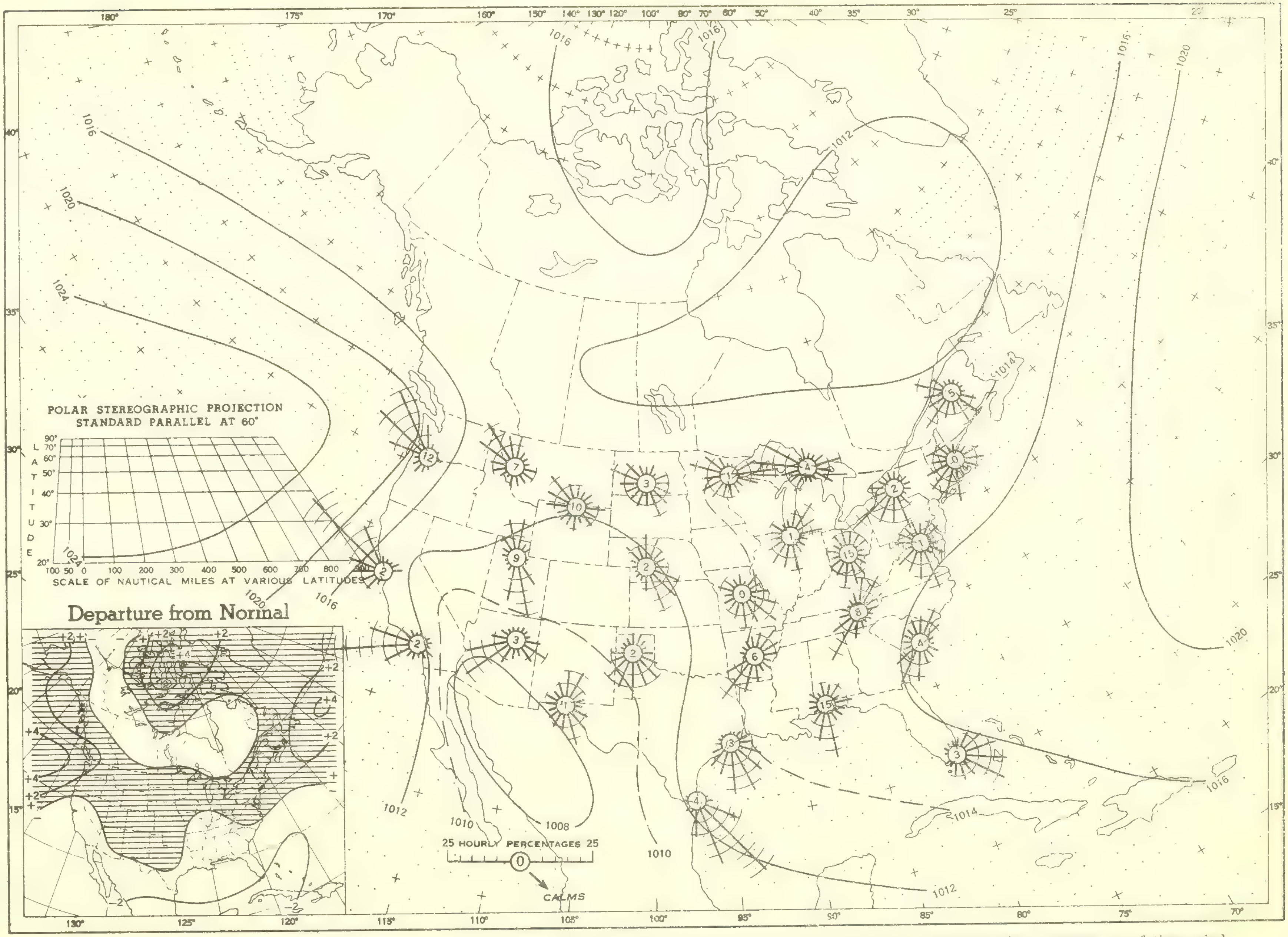
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, June 1960.



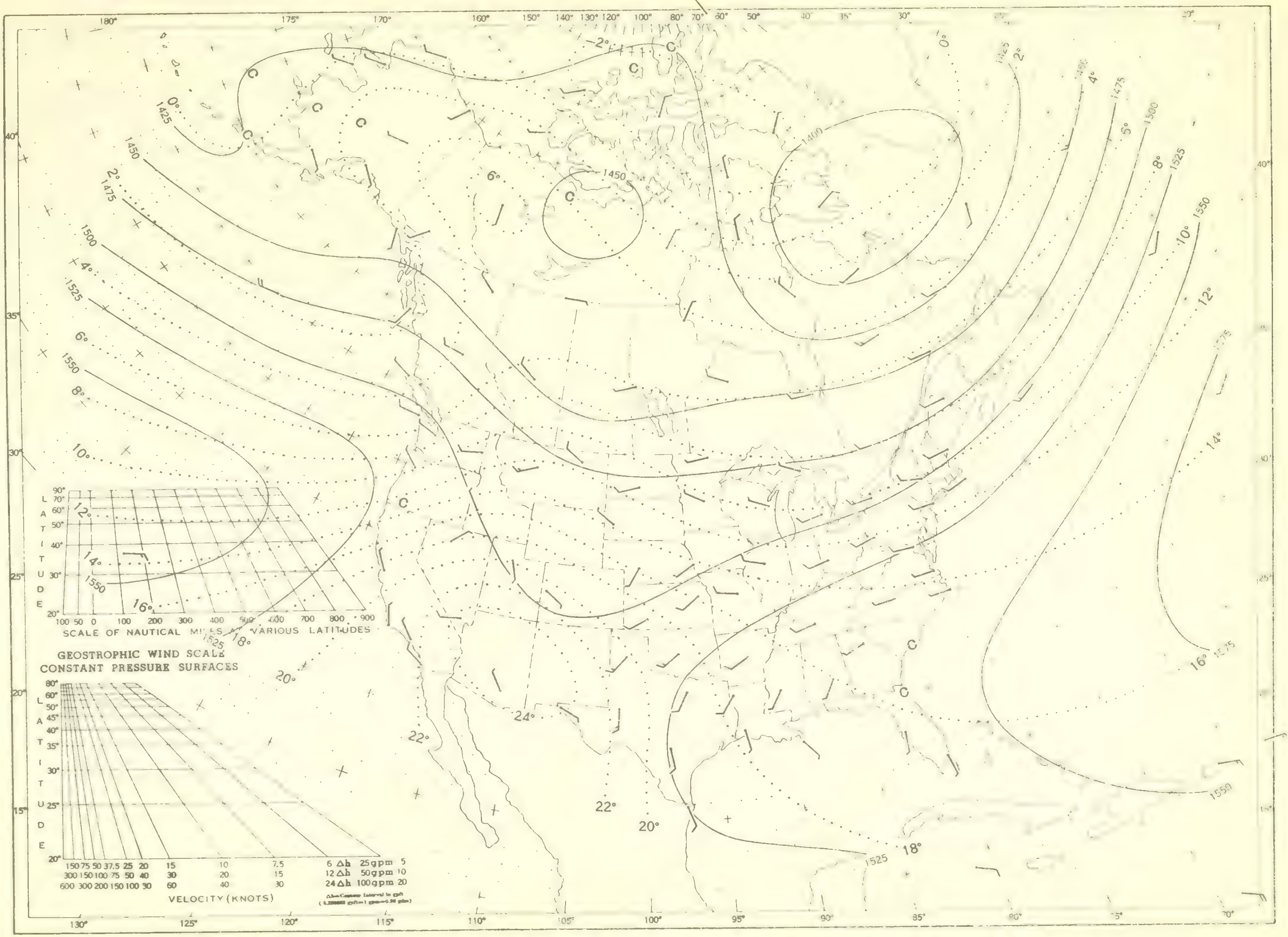
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, June 1960. Inset: Departure of Average Pressure (mb.) from Normal, June 1960.



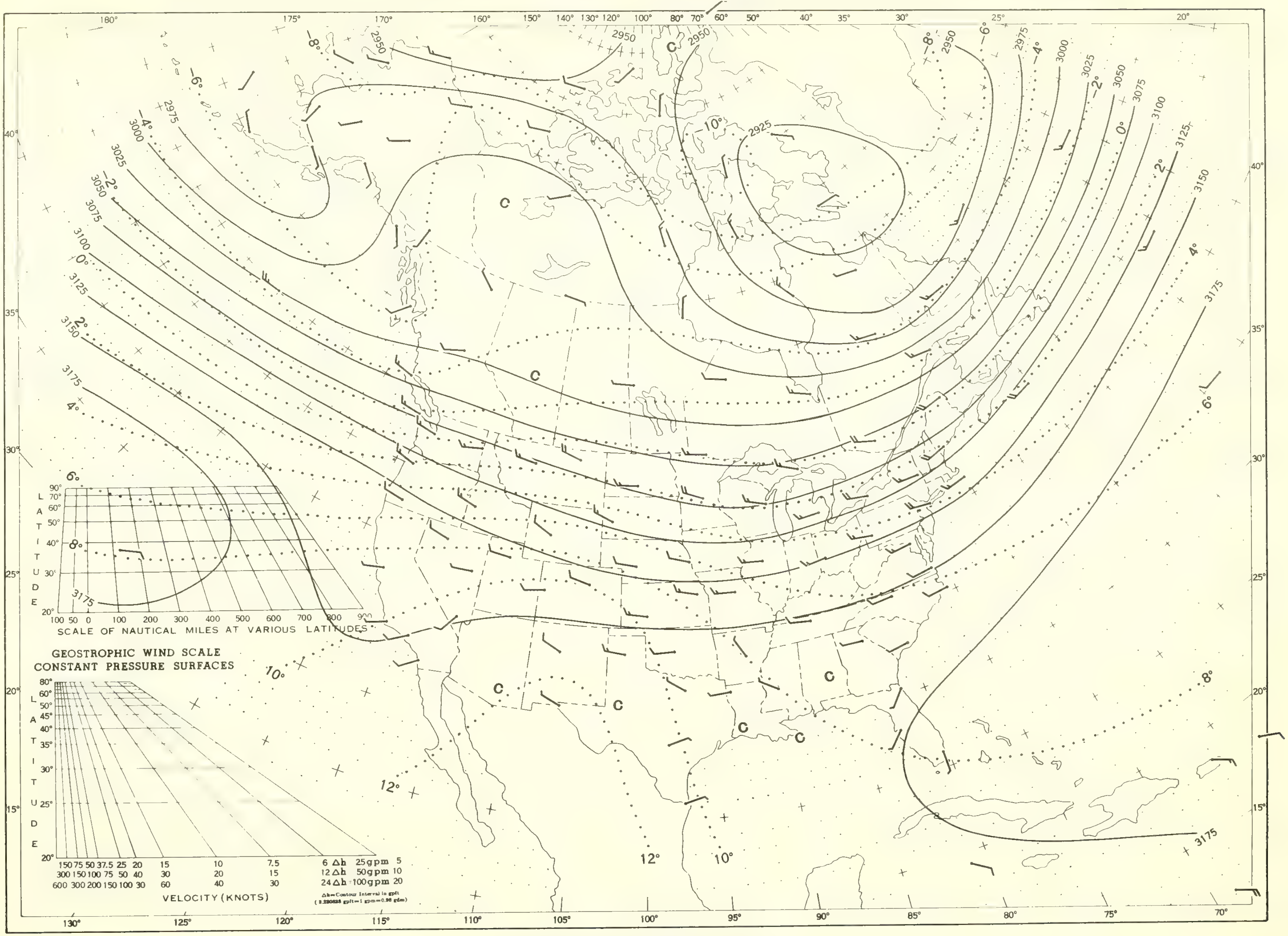
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, June 1960. Average Height and Temperature, and Resultant Winds.



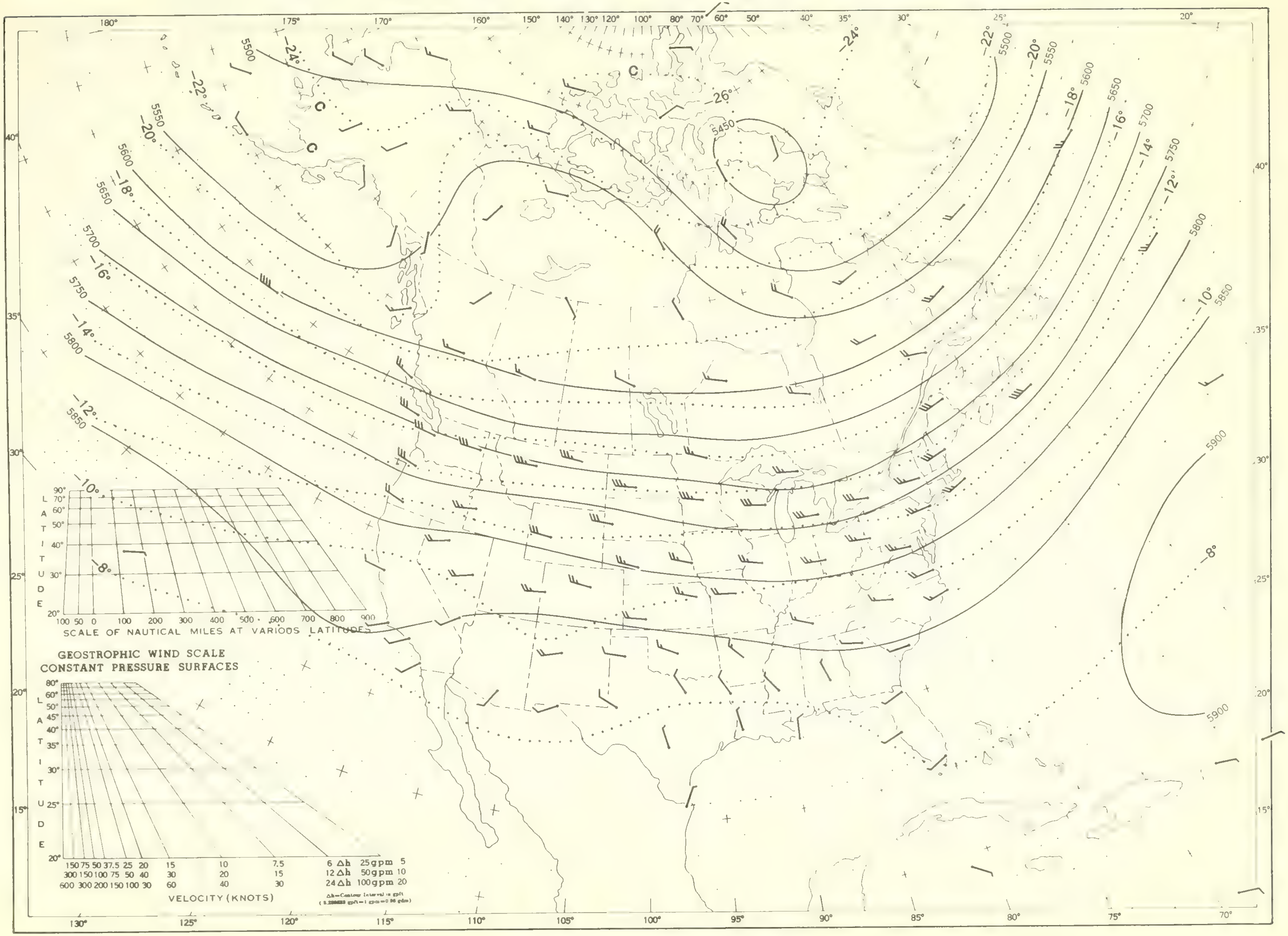
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, June 1960. Average Height and Temperature, and Resultant Winds.



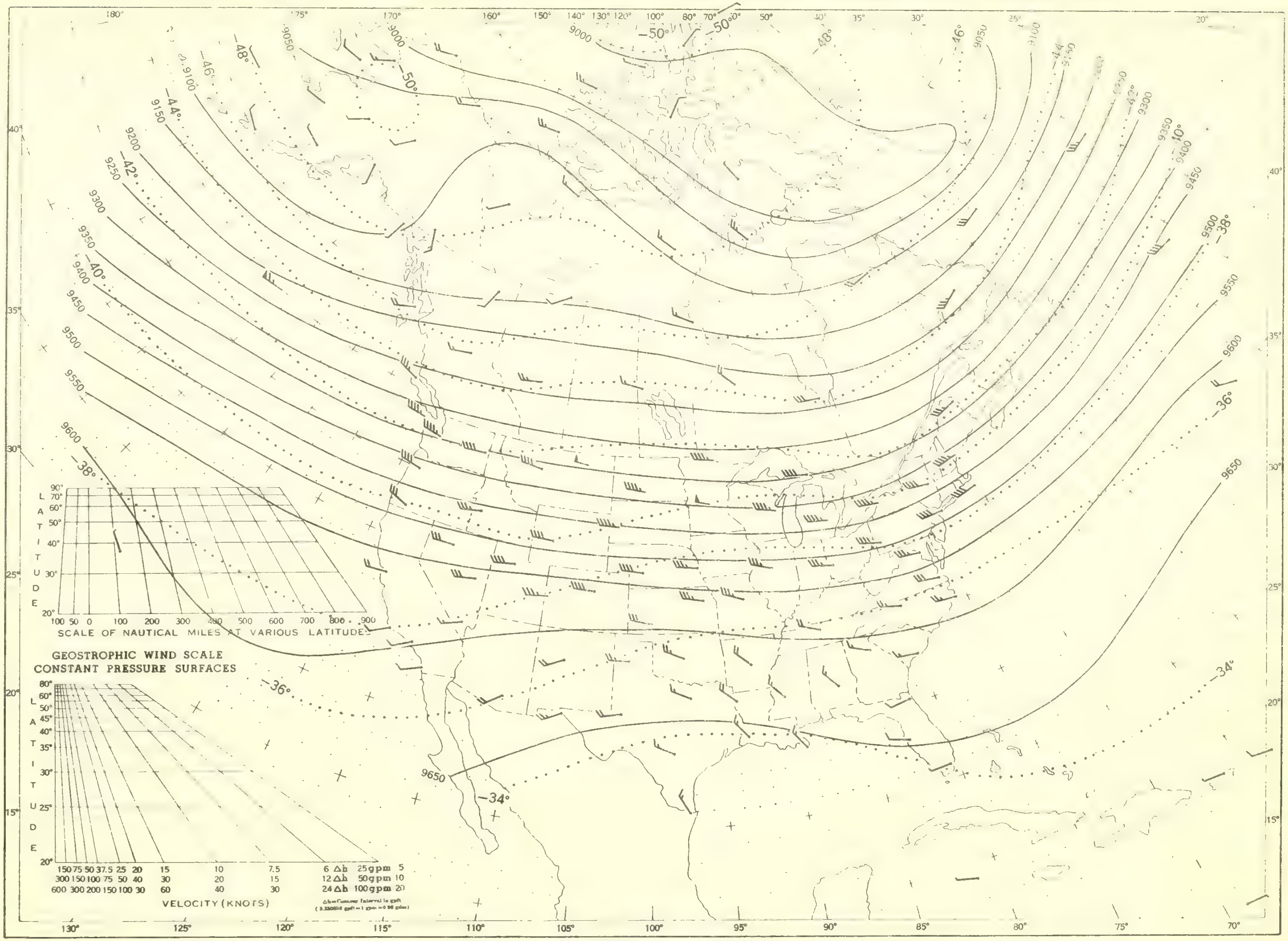
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, June 1960. Average Height and Temperature, and Resultant Winds.



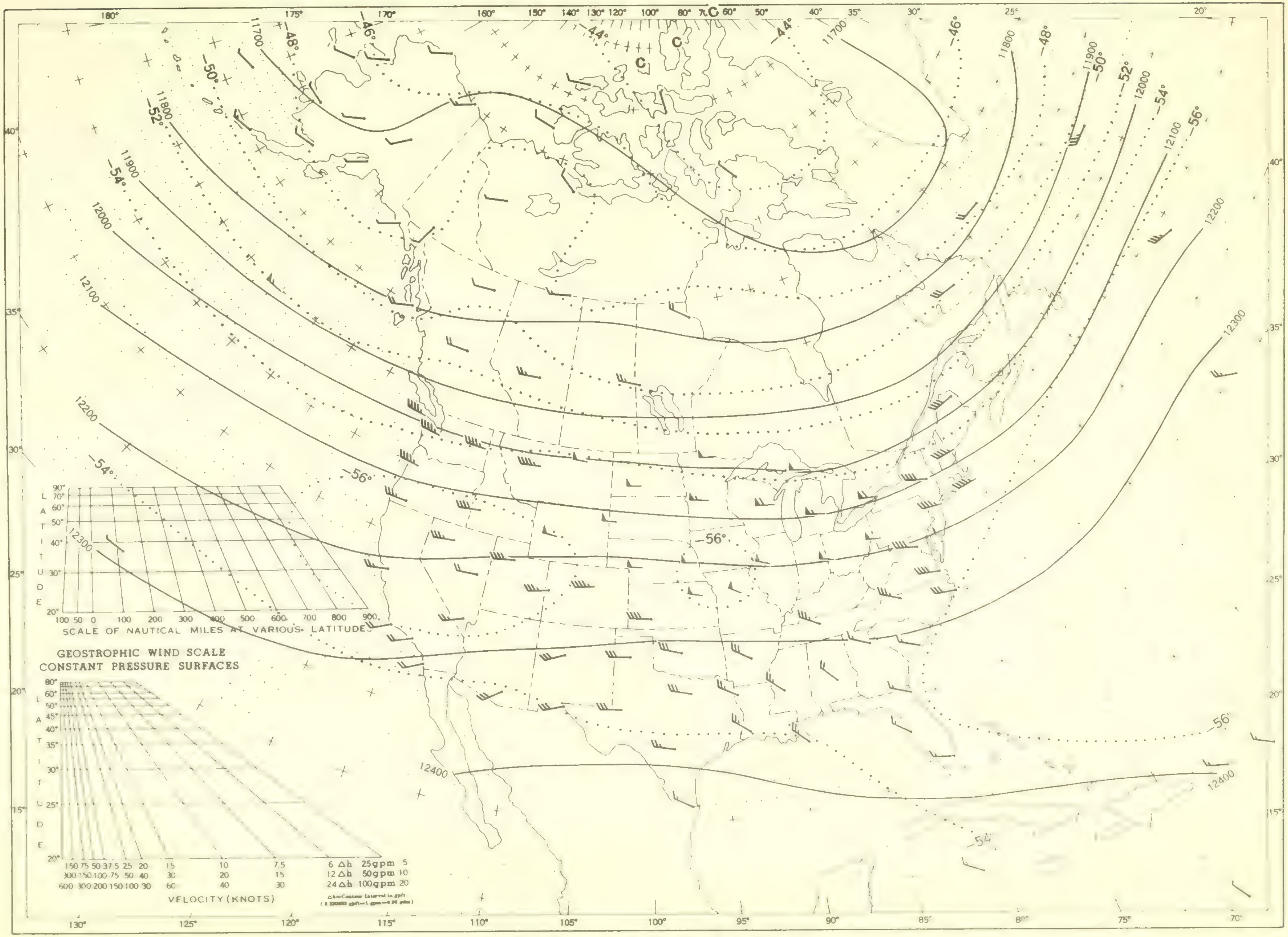
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, June 1960. Average Height and Temperature, and Resultant Winds.



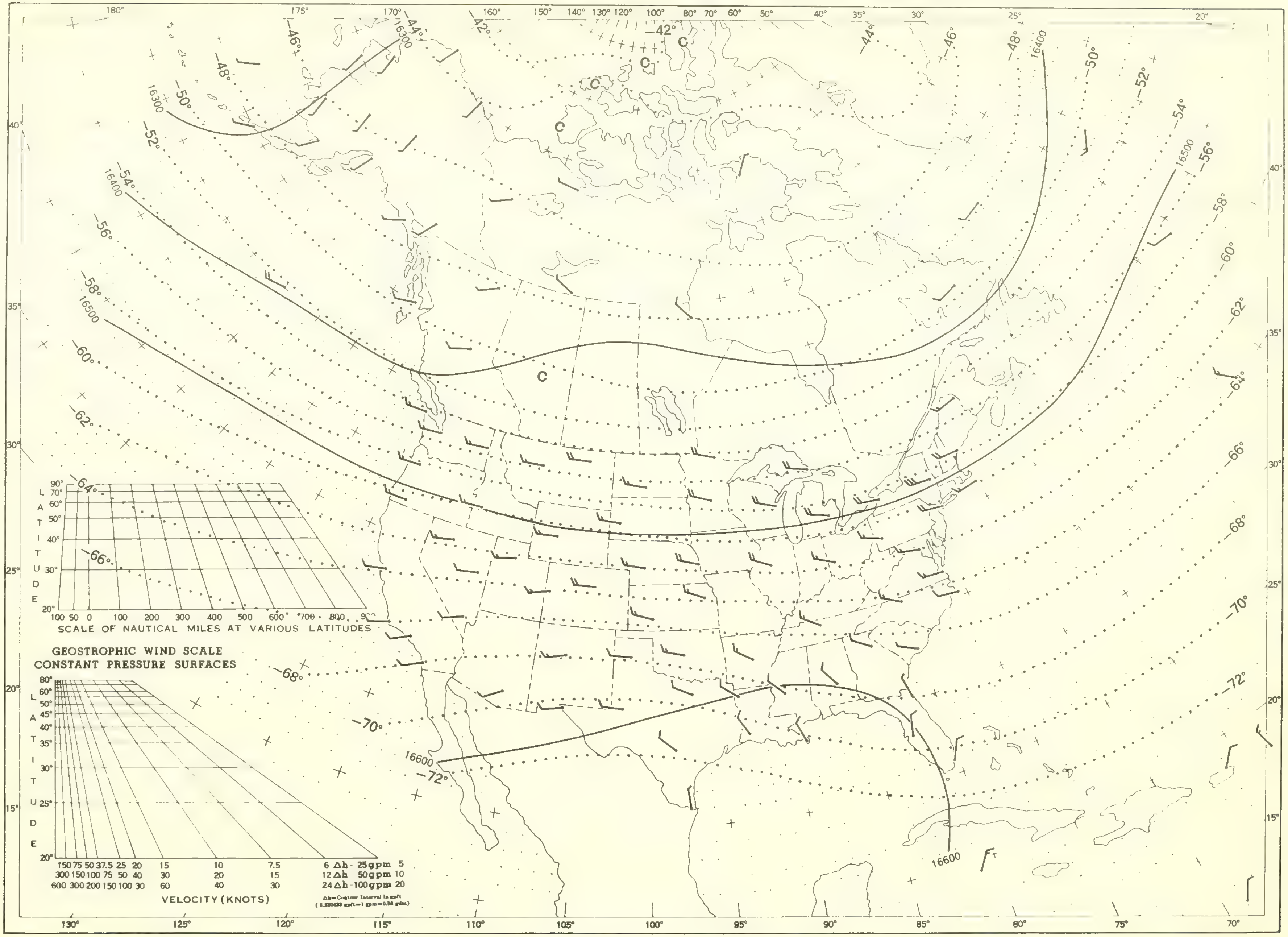
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, June 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, June 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

3C.51 11/7

U. S. DEPARTMENT OF COMMERCE
FREDERICK H. MUELLER, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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JULY 1960
Volume 11 No. 7

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 7 JULY 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

Persistent heat and drought in the Far West and unusually low monthly average temperatures from the central Great Plains northeastward through the Great Lakes region and Ohio Valley into the Middle Atlantic States highlighted the Weather of July 1960. Rainfall east of the Rockies, as usual, was spotty, ranging from a few hundreths in some sections to record-breaking amounts in others. Outstandingly heavy rainfall was centered mainly in portions of Texas and Oklahoma and sections along the east coast including the Florida Peninsula. Much of the heavy rainfall along the east coast fell during the passage of tropical storm Brenda on the 29th and 30th.

TEMPERATURE. --This month was among the hottest Julys on record in the Far West where average temperatures for the month generally ranged from 2° to 6° above normal. In many northern sections temperatures remained above normal on all except a few days when they were only slightly below normal. The outstanding example of this month's unusual heat occurred at Salt Lake City, Utah, where the following records were established for the station: The hottest day in the city's history, 107° on the 26th; the only month of record with all daily maxima 90° or above; greatest consecutive number of days with maxima 90° or above (39 since June 24); greatest consecutive number of days with maxima 100° or above (9); greatest number of days with 100° or above in one month (15); highest daily maxima on record for the 15th, 16th, 17th, 18th, 20th, 26th, and 27th; highest monthly average (81. 2°); highest mean maximum (98.2°); and highest mean minimum (64.2°). Boise, Idaho, with an average of 80. 7° also had its hottest July on record, and Walla Walla and Spokane, Wash., had their hottest July since 1906. On the 19th Blue Canyon in the Sierras of California recorded 91°; Boise, Idaho, 111°; Kalispell, Mont., 104°, all new records for those stations. On the 26th Milford, Utah, recorded 104°, a new record July high there. Cheyenne, Wyo., recorded a minimum temperature of 68° on the 31st, the highest minimum ever recorded there during any month. Despite the hot weather in the Far West, the temperature on the 11th fell to 33° at Reno, Nev., the lowest temperature ever recorded there in July.

East of the Rockies the month was among the coolest Julys on record from the central Great Plains eastward and northeastward to the Atlantic coast. At many stations in this area, temperatures were above normal on only 3 or 4 days during the month; Louisville, Ky., had only 1 such day. This was the coolest July on record at Wilmington, Del., (73. 1°); Cleveland, Ohio, (67. 6°); and Pittsburgh, Pa., (68. 6°). This was the coolest July at Erie and Philadelphia, Pa., since 1895; at Milwaukee, Wis., since 1915; at Peoria, Ill., since 1924; the sixth coolest on record during the past 160 years at Albany, N. Y.; and the second coolest on record at Dallas, Tex. A low of 49° at Buffalo, N. Y., on the 15th equaled the record low there for July. The unusually cool weather east of the Rockies was due to the persistence of below-normal temperatures rather than to any periods of extreme cold.

PRECIPITATION. --July rainfall was unusually heavy in the Oklahoma-north Texas-eastern New Mexico area, in areas along the Atlantic coast, and in southeastern Oregon. In contrast the Rocky Mountain area, the northwestern Great Plains, and most of the State of Mississippi and some adjoining areas received less than 50 percent of normal rainfall for the month.

In the lower Great Plains region an area of unusually heavy rainfall, with numerous local record-breaking amounts for July, extended from extreme southeastern Kansas, southwestern Missouri, and eastern Arkansas southwestward into eastern New Mexico. Heavy rainfall in this area was rather general from about the 3d to the 9th and from the 21st to the 25th. During the first period heavy rains from southeastern Colorado southward through eastern New Mexico and western Texas generally ranged from 1 to 4 inches with local heavier amounts topped by 15 inches or more south of Lubbock, Tex. Heavy damaging local flash floods caused by these heavy rains damaged crops and highways, but the rains benefited agriculture. During the second period rains were heavier in the eastern part of the area where Fort Smith, Ark., measured 8. 38 inches, and Oklahoma City and Tulsa, Okla., measured 4. 29 and 4. 02 inches, respectively. The monthly total of 10. 43 inches at Fort Smith, Ark., was a July record for that station. At Amarillo, Tex., rain fell continuously from the evening of the 5th through the morning of the 8th, the longest period of continuous rain there since records began at Amarillo in 1892. Clovis, N. Mex., measured 13. 44 inches for the month, almost 5 inches above any previous July total in 50 years of record and exceeded by more than an inch any previous monthly total.

Most of the heavy rainfall along the Atlantic coast occurred during the passage of tropical storm Brenda on the 29th and 30th. Amounts of more than 4 inches were rather general from eastern Georgia to southern Maryland and in New Jersey and Connecticut. An alltime record amount of 12. 11 inches was measured in 24 hours at Tampa, Fla., on the 28-29th, and 4- to 5-inch totals were numerous in west-central Florida. Also, a 4. 90-inch total in 24 hours at the Battery in New York City was the heaviest such amount there in July; the previous record was 3. 80 inches on July 26, 1872. In addition to the heavy rains from Brenda, heavy thundershowers boosted monthly totals in central Florida to new records for July. Some of these included 15. 67 inches at Lakeland, 20. 59 inches at Tampa, 19. 57 inches at Orlando, and 16. 21 inches at Jacksonville. Savannah, Ga., also reported a new record July amount of 15. 70 inches. Longboat Key, recorded the greatest amount for the month in Florida, 23. 20 inches.

July, like June, was abnormally hot and dry in the northwestern Great Plains and nearly all of the Far West, except an area including southeastern Oregon, northeastern California and northwestern Nevada where beneficial rains fell during the last few days of the month. During July, 366 or 11 percent of all stations in the far western States reported no rain at all.

DESTRUCTIVE WEATHER PHENOMENA.--On the 2d and 3d a series of thunderstorms with wind and hail, moving from the upper Mississippi Valley to the Atlantic coast, were responsible for widespread property damage. During the remainder of the month no outstanding destructive weather conditions were reported.

San Diego, Calif., reported 80 percent of the possible sunshine for the month, the most there for July since the record began in 1890.

CONDENSED CLIMATOLOGICAL SUMMARY

JULY 1960

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	2 Stations	103	26+	Russellville 2	54	15	Eufaula	10.33	Gadsden	0.69
Arizona	Parker	120	16	Maverick	32	11	Elgin 5N	7.29	5 Stations	.00
Arkansas	Lead Hill	104	12	2 Stations	52	16+	Fayetteville Exp Sta	13.97	Hope 3NE	.18
California	Greenland Ranch	129	18	Boca	27	11	Jess Valley	1.65	253 Stations	.00
Colorado	Eversoll Ranch	109	27	North Lake	24	7	North Lake	4.97	Palisade 1S	T
Connecticut	2 Stations	93	13+	Coventry	38	7	Trap Falls Reservoir	9.42	Groton	5.04
Delaware	do	95	23	2 Stations	52	8	Bridgeville 1NW	7.74	Selbyville	4.82
Florida	Monticello 2S	102	3+	Crestview Radio WJSB	61	27+	Longboat Key	23.20	Marathon Shores	2.28
Georgia	3 Stations	101	21+	Blairsville Exp Sta	50	15	Savannah Beach	19.48	Butler	.75
Idaho	2 Stations	112	19	3 Stations	27	24+	Hollister	1.44	10 Stations	.00
Illinois	5 Stations	96	23+	Kankakee 3SW	47	31	Antioch	6.88	Grand Tower 2N	1.02
Indiana	La Porte	96	22	Martinsville	42	7	Hartford City 4NW	6.11	Tell City Power Pl	1.01
Iowa	3 Stations	99	23+	Atlantic 1NE	43	31	Independence 2SW	7.50	Forest City	.62
Kansas	Syracuse 2WNW	112	27	2 Stations	47	31	Conway Springs	7.01	Palco 1SSW	.04
Kentucky	Warsaw Markland Dam	97	24	4 Stations	52	16+	Vanceburg Dam 32	8.06	Benton 2	.30
Louisiana	Winnfield	105	12	Homer Exp Station	61	22+	New Orleans London	9.58	Koran	.12
Maine	Hiram 2S	97	11	Squa Pan Dam	36	15	Augusta FAA Airport	6.88	Bar Harbor	2.40
Maryland	Leonardtown 3NW	98	23	Oakland 1SE	38	8	Cambridge 4W	11.25	Chewsville Bridgeport	1.54
Massachusetts	Lowell	96	12	West Cummington	38	5	Westfield	8.46	Nantucket WB Airport	1.91
Michigan	Flint WB Airport	94	22	3 Stations	31	1	Munising	6.75	Romeo 1N	.34
Minnesota	Wheaton	102	21	Bigfork	34	14	Winsted 1WNW	5.68	Angus 4NNE	.35
Mississippi	Meadville	105	12	Pontotoc Exp Sta	51	18	McHenry 5ESE	15.81	Onward	.03
Missouri	2 Stations	103	13+	Waynesville 2W	44	5	Mountain Grove 2N	8.16	Fairfax	.72
Montana	Miles City	113	20	2 Stations	28	5+	Winnett 5NE	2.67	5 Stations	.00
Nebraska	2 Stations	106	21+	Fort Robinson	40	6	Geneva	6.64	Lyman	.15
Nevada	do	121	17	2 Stations	30	31+	Orovada	1.59	6 Stations	.00
New Hampshire	5 Stations	92	13+	First Conn Lake	35	15	Durham	6.69	First Conn Lake	2.51
New Jersey	Flemington 1NE	95	13	4 Stations	47	16+	Rahway	11.14	High Point Park	4.23
New Mexico	2 Stations	110	5+	Gascon	30	24	Clovis	13.44	2 Stations	T
New York	do	94	14+	Indian Lake 2SW	32	15	Bedford Hills	13.38	Fulton	.24
North Carolina	do	98	4+	2 Stations	45	15	Faison	13.81	Hiwassee Dam	1.27
North Dakota	Marmarth	111	21	Langdon Exp Farm	35	3	Medina	4.55	Adams 7S	.15
Ohio	Chilo Dam 34	97	24	Canfield 1S	41	17	Washington Courthouse	7.70	Portland Dam 21	1.64
Oklahoma	Frederick	109	27	2 Stations	50	31+	Checotah	17.00	Hooker	1.56
Oregon	Spray	115	18	Minam 7NE	25	24	Odell Lake Land Pan	1.52	30 Stations	.00
Pennsylvania	Newell	96	27	2 Stations	35	15+	Zionsville 3NW	8.70	Bradford FAA Airport	1.44
Puerto Rico	4 Stations	95	30+	Garzas Dam	53	5	Rio Blanco Upper	19.90	Quebradilla	1.23
Rhode Island	Providence WB Airport	90	12	Kingston	45	7	Greenville	6.84	Block Island WB AP	4.14
South Carolina	Ridgeland 2SE	103	3	Parr	55	17	Ridgeland 2SE	16.95	Fort Mill 4NW	1.51
South Dakota	2 Stations	110	20	Deerfield 5NW	30	5	Wood	3.78	Spearfish 9WNW	.07
Tennessee	Savannah	99	31+	Unicoi 2ESE	48	15	Roan High Knob	9.93	Pulaski	.36
Texas	Catarina 3NW	114	30	Mount Locke	52	18	McKinney	13.27	Mission	.03
Utah	Zion NP	112	25	Strawberry Res	30	7+	Grouse Creek Kimber	2.18	3 Stations	.00
Vermont	5 Stations	91	30+	West Burke	36	10	Mays Mill	7.33	Enosburg Falls	2.48
Virginia	4 Stations	100	23	Woodstock	39	8	Wakefield	12.71	New Castle	.89
Washington	2 Stations	112	19+	Rainier Paradise RS	31	2	Rainier Paradise RS	.48	53 Stations	.00
West Virginia	do	98	27+	Canaan Valley	35	8	Clendenin 1SW	7.05	Mathias	1.30
Wisconsin	Bayfield 6N	99	1	Prentice 5W	31	14	Madison WB City	8.58	Mather 3NW	.36
Wyoming	Spencer 10NE	112	21	Bondurant 3NW	26	25	Centennial	2.06	5 Stations	.00

+ And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 90° F or above	Min 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F		=		°F	%	In.	In.	In.			In.	In.	M p. h.		M p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	990.5	1015.4	94	71	82.3	2.7	98	26+	67	31+	29	0	69	71	2.06	-3.05	0.50	10	9	0.0	0	5.6	N	57	SW	4	5	20	6	5.7	76
Huntsville	605	992.5	1015.4	93	70	81.2	----	97	25+	64	15	28	0	68	69	3.49	----	2.61	5	7	.0	0	6.3	N	*23	N	17	6	20	5	5.4	--
Mobile	211	1007.2	1015.3	92	73	82.4	1.7	97	22+	69	22	28	0	73	78	9.21	.24	2.25	15	22	.0	0	7.9	S	*46	S	5	4	19	8	6.2	--
Montgomery	198	1007.1	1015.1	94	74	83.8	2.6	98	2	70	31	29	0	72	74	4.79	-.97	1.91	11	13	.0	0	7.6	W	34	W	23	5	21	5	5.5	63
ALASKA																																
Anchorage	90	1009.8	1014.9	64	51	57.6	.3	80	12+	42	2	5	0	48	72	2.71	1.16	.44	17	0	.0	0	8.5	S	*25	SSE	4	2	9	20	7.9	39
Annette	110	1016.3	1020.1	64	53	58.4	1.6	85	11	46	5	5	0	51	80	9.06	3.47	2.31	15	0	.0	0	8.0	SSE	*31	SE	15	2	4	25	8.2	--
Barrow	22	1015.9	1016.6	43	32	37.5	-2.2	75	11	28	3	1	23	34	89	.21	-.62	.09	4	0	T	0	10.8	E	*28	E	28	3	10	18	7.5	--
Barter Island	39	1013.9	1015.7	42	33	37.2	-3.6	68	18	29	9+	0	16	34	91	.71	-.47	.30	9	0	.4	T	10.7	ENE	*31	W	16	6	10	15	6.9	--
Bethel	125	1011.2	1012.7	64	49	56.6	2.1	83	14+	41	7	10	0	50	81	3.23	.94	1.01	19	0	.0	0	12.4	S	*29	WNW	3	3	5	23	8.2	--
Cold Bay	90	1011.5	1014.9	56	47	51.6	1.6	77	13	40	8+	2	0	47	87	1.39	-.75	.86	15	0	.0	0	13.2	SSE	*35	SSE	19	2	3	26	9.0	—
Cordova	40	1015.2	1016.7	60	46	52.7	-.6	78	12+	37	16	4	0	48	84	9.10	2.66	1.60	24	0	.0	0	4.0	ENE	*17	E	28	2	1	28	9.1	--
Fairbanks	436	995.9	1012.6	73	51	62.1	1.2	89	14	41	9	21	0	50	66	1.38	-.54	.44	14	0	.0	0	6.9	SW	*21	WSW	20	5	7	19	7.0	--
Juneau	17	1017.6	1018.4	61	48	54.4	-.3	75	12	40	21	2	0	49	83	4.31	-.34	.80	19	1	.0	0	9.0	E	*29	ESE	17	0	1	30	9.5	18
King Salmon	44	1012.2	1014.1	64	47	55.7	1.1	83	12	41	10+	9	0	49	79	2.72	-.10	.91	17	2	.0	0	10.3	S	*29	E	2	2	5	24	8.4	--
Kotzebue	10	1012.5	1012.8	59	48	53.5	.9	72	24+	35	8+	4	0	48	82	2.31	.78	.77	7	0	.0	0	12.5	WNW	*31	WNW	4+	7	13	11	6.3	--
McGrath	334	1000.3	1012.9	68	50	58.8	.1	88	13	43	10+	13	0	47	68	4.10	1.78	1.37	16	1	.0	0	6.3	S	*17	SSW	18+	3	9	19	7.8	--
Nome	13	1012.2	1012.7	62	47	54.3	4.7	80	16	35	7+	3	0	47	78	1.79	-.67	.55	12	1	.0	0	8.0	SE	*24	E	24+	3	11	17	7.3	37
Shemya	122	1008.1	1012.9	50	44	47.3	----	57	25	40	3+	0	0	46	96	2.52	----	.76	15	0	.0	0	15.2	S	*32	SW	29+	0	1	30	9.8	--
St. Paul Island	22	1011.9	1013.2	51	42	46.3	.4	62	15	29	4	0	1	45	94	2.17	-.26	.46	17	0	.0	0	----	---	--	---	--	3	4	24	8.4	--
Yakutat	28	1016.9	1018.1	59	47	53.3	.6	79	11	40	8+	2	0	50	86	18.67	10.04	3.72	22	0	.0	0	6.8	ESE	*26	SE	17	1	1	29	9.3	--
ARIZONA																																
Flagstaff	6993	------	------	84	51	67.4	2.2	92	16	42	12	3	0	--	--	.96	-1.53	.44	6	13	.0	0	----	---	--	---	--	10	17	4	4.8	--
Phoenix	1109	971.2	1009.3	105	79	92.4	2.3	112	17	73	12	31	0	56	32	.25	-.45	.24	2	9	.0	0	7.5	NE	*46	SE	3	18	12	1	3.2	95
Prescott	5014	849.6	1012.7	92	62	77.0	1.0	99	25+	56	11	25	0	44	36	.94	-1.77	.45	7	14	.0	0	9.5	SSW	36	SW	26+	14	14	3	3.9	79
Tucson	2584	924.8	1010.3	99	73	86.0	-.2	105	17+	63	12	30	0	55	75	.73	-1.07	.28	6	14	.0	0	9.8	ESE	36	NE	25+	13	11	7	4.6	77
Winslow	4880	853.4	1010.1	97	63	80.4	3.2	102	26+	56	8	31	0	41	29	.94	-.30	.75	3	7	.0	0	10.2	SW	*46	ESE	27	13	11	7	4.4	--
Yuma	199	1003.7	1008.8	110	81	95.8	1.2	117	20+	74	11+	31	0	57	32	T	-.23	T	0	2	.0	0	9.2	S	31	SE	26	22	8	1	1.8	96
ARKANSAS																																
Fort Smith	458	998.6	1015.3	92	70	80.8	-1.5	100	27+	60	16	22	0	70	73	10.41	7.85	7.13	10	10	.0	0	7.2	NE	35	N	28	11	9	11	5.4	58
Little Rock	257	1002.4	1015.4	91	71	80.7	-1.2	98	12	63	17+	20	0	71	75	2.38	-.72	.77	8	8	.0	0	6.6	SW	56	NW	27	10	12	9	5.1	71
Texarkana	361	------	1015.4	92	72	82.3	-.6	100	27	65	9	24	0	--	--	1.32	-2.62	1.21	5	6	.0	0	5.4	ENE	--	---	--	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	993.9	1011.6	100	72	86.1	1.9	110	19	63	13	31	0	52	33	.00	-.01	.00	0	1	.0	0	6.4	NW	*21	WNW	17+	22	8	1	2.2	--
Bishop	4108	875.0	1012.5	98	58	78.4	2.9	107	19+	51	15+	31	0	--	--	.19	.09	.17	3	7	.0	0	----	---	--	---	--	14	16	1	3.8	--
Blue Canyon	5280	842.2	1012.2	81	63	72.1	4.3	91	19	53	1	2	0	--	--	.07	.04	.07	1	3	.0	0	6.1	SSW	32	E	4	17	9	5	3.2	--
Burbank	699	986.8	1013.1	90	63	76.8	3.6	103	20+	56	8+	15	0	55	54	T	.00	T	0	1	.0	0	7.2	ESE	*17	ESE	18+	23	7	1	2.2	--
Eureka (U)	43	1014.9	1017.3	58	50	54.3	-2.1	63	12	47	2	0	0	--	--	.02	-.07	.02	1	0	.0	0	6.1	Φ N	17	N	2	3	11	17	7.0	47
Fresno	331	999.3	1010.9	99	66	82.9	.8	110	20	58	11	31	0	53	74	T	-.01	T	0	0	.0	0	7.6	WNW	17	S	29	22	7	2	2.1	95
Long Beach	34	1012.5	1013.7	86	62	73.9	----	100	22	51	15	8	0	57	65	T	----	T	0	1	.0	0	7.0	WNW	*20	NW	20	22	8	1	2.7	--
Los Angeles (U)	312	------	------	87	64	75.5	3.0	100	20	57	3	10	0	64	66	.00	.00	.00	0	0	.0	0	5.5	Φ W	18	NW	20	25	6	0	1.9	90
Los Angeles	99	1009.8	1013.5	76	63	69.3	1.7	92	21	58	4+	1	0	61	79	T	.00	T	0	0	.0	0	6.7	WSW	*15	WSW	11+	14	16	1	3.6	--
Mt. Shasta (R)	3544	893.3	1014.6	90	55	72.2	5.0	98	17	46	11	18	0	--	--	.15	-.04	.10	3	5	.0	0	----	---	--	---	--	26	3	2	1.4	--
Oakland	3	1014.2	1014.7	73	55	64.0	1.3	92	20	51	2	1	0	54	76	T	-.01	T	0	0	.0	0	10.5	WNW	*23	WNW	12+	16	12	3	3.8	--
Point Arguello(R)	367	1001.0	1014.3	65	51	58.3	----	83	21	47	20+	0	0	--	--	.01	----	.01	1	0	.0	0	7.2	---	*22	WNW	4	4	6	21	7.5	--
Red Bluff	341	998.6	1011.0	102	70	85.6	2.4	114	17	58	10	29	0	48	31	T	-.02	T	0	1	.0	0	9.8	S	26	SE	29	26	4	1	1.3	98
Sacramento	17	1010.2	1011.7	98	60	78.9	4.3	111	21+	50	11	27	0	54	51	.01	.01	.01	1	0	.0	0	7.6	SSW	24	SW	10	22	9	0	1.7	99
Sandberg (R)	4517	864.5	1012.9	88	65	76.5	2.6	100	18	55	10	14	0	--	--	.04	.02	.04	1	0	.0	0	11.5	N	*29	N	16	23	7	1	2.0	--
San Diego	19	1009.8	1012.9	78	64	71.2	1.9	89	23	58	9	0	0	64	75	T	-.01	T	0	0	.0	0	6.6	NW	16	S	21	21	9	1	3.0	80
San Francisco	[illegible]	1013.9	1014.8	72	53	62.4	2.0	86	20	50	19+	0	0	52	76	T	-.01	T	0	0	.0	0	14.0	WNW	33	W	13	23	6	2	2.8	--
San Francisco (U)	52	------	------	63	53	58.1	-.8	75	20	51	28	0	0	--	--	T	-.01	T	0	0	.0	0	11.5	Φ W	28	SW	17	--	--	--	----	65
Santa Maria	238	1006.1	1014.7	72	53	62.7	.5	89	21	49	20	0	0	53	75	T	-.03	T	0	0	.0	0	6.5	WNW	*24	WNW	1	18	9	4	3.8	--
COLORADO																																
Alamosa	7536	777.9	1019.2	82	46	64.2	.1	90	27	41	17+	1	0	--	--	.55	-.32	.20	6	7	.0	0	----	---	--	---	--	8	19	4	4.9	--
Colorado Springs	6173	816.5	1017.0	83	55	69.0	-2.2	97	27	49	19	7	0	47	53	2.22	-.50	.74	12	12	.0	0	10.0	NE	*30	NNE	17	9	13	9	5.3	--
Denver	5292	842.2	1015.8	87	59	73.2	.4	96	1	51	4	14	0	45	43	1.31	-.05	.69	9	8	.0	0	9.1	SSW	45	NW	16	11	14	6	4.6	74
Grand Junction	4849	860.8	1012.7	94	65	79.5	1.3	102	27	58	8	26	0	36	48	.13	-.66	.10	3	5	.0	0	11.1	ESE	43	W	20	16	13	2	3.7	90
Pueblo	4639	860.5	1015.8	89	59	74.1	-.8	103	27	54	20+	17	0	52	53	3.06	1.25	.98	8	9	.0	0	7.8	SE	53	N	24	11	13	7	4.7	80
CONNECTICUT																																
Bridgeport	7	1014.5	1015.4	82	64	72.8	.0	90	9	56	6	1	0	61	70	8.13	4.16	3.57	5	2	.0	0	8.4	SW	35	E	30	11	11	9	5.3	--
Hartford	169	1008.1	1014.2	82	58	70.3	-3.5	93	12	48	7	2	0	60	72	8.20	4.64	3.48	9	4	.0	0	6.8	S	26	S	3	11	9	11	5.5	65
New Haven	6	1014.4	------	80	62	71.0	-.2	88	9	54	8+	0	0	--	--	6.08	2.42	1.72	6	2	.0	0	7.1	---	24	S	30	12	11	8	4.9	74
DELAWARE																																
Wilmington	78	1012.1	1015.5	83	63	73.1	-2.8	90	3	54	8	1	0	62	71	6.18	1.69	2.47	9	5	.0	0	7.9	S	23	SSE	26	10	9	12	5.5	--
DIST. OF COLMUBIA																																
Washington (U)	72	------	------	86	67	76.5	-1.3	94	23	59	15	7	0	--	--	5.29	1.18	----	10	--	----	--	----	---	--	---	--	--	--	--	----	--
Wash. Nat'l. AP	14	1011.0	1015.5	86	68	77.0	-.3	94	23	61	15	5	0	63	65	4.61	.35	1.53	9	4	.0	0	10.2	S	30	SSE	29+	13	7	11	5.0	66
FLORIDA																																
Apalachicola (U)	13	1012.7	------	88	76	82.0	.7	92	22+	71	24	8	0	--	--	5.17	-2.39	.96	18	18	.0	0	5.9	---	34	NW	21	6	13	12	6.5	58
Daytona Beach	31	1014.7	1016.6	89	73	81.0	.2	93	4+	71	18+	10	0	74	86	8.70	1.59	2.07	19	27	.0	0	7.5	SW	*29	W	18	0	13	18	7.6	--
Fort Myers	15	1015.5	------	91	74	82.5	.5	94	23+	72	24+	23	0	--	--	13.76	5.04	3.18	21	27	.0	0	6.9	---	*35	WSW	29	3	16	12	6.7	--
Jacksonville	24	1014.4	1015.8	92	74	83.0	.9	98	3+	71	17+	22	0	74	81	16.21	8.57	3.72	20	20	.0	0	6.7	SW	35	N	3	2	12	17	7.1	42
Key West	5	1014.8	1016.2	90	80	85.0	1.3	92	25+	72	31	25	0	75	73	3.79	-.45	1.01	12	15	.0	0	10.2	SE	29	N	17	4	17	10	6.2	68
Lakeland (U)	214	------	------	91	74	82.1	.9	97	16	71	30+	22	0	--	--	15.67	7.51	6.66	19	27	.0	0	5.4	---	--	---	--	0	19	12	7.0	58
Miami	7	1015.0	1016.5	90	77	83.7	1.1	93	15+	73	30	25	0	74	75	5.27	-1.46	1.51	15	20	.0	0	7.0	SE	28	NW	4	4	20	7	5.8	--
Miami Beach	9	------	------	89	80	84.2	1.7	91	5	73	31+	6	0	--	--	6.30	2.47	3.07	10	--	.0	0	----	---	¢25	S	31+	0	25	6	5.6	¢63
Orlando	106	1012.0	1016.5	93	74	83.1	1.0	98	6	70	26	26	0	73	81	19.57	11.87	8.19	21	23	.0	0	7.3	SW	*23	SSW	29+	2	16	13	7.0	--
Pensacola (U)	13	------	------	91	76	83.1	2.1	97	26	72	4	19	0	--	--	6.35	-1.24	2.27	15	19	.0	0	†8.7	---	30	NW	27	--	--	--	----	59
Tallahassee	64	1012.4	1015.1	90	72	81.0	.0	95	21	70	12	18	0	73	84	5.59	-2.28	1.55	18	21	.0	0	4.1	S	*24	NE	25	1	15	15	7.2	--
Tampa	19	1014.6	1016.2	90	76	82.6	.9	95	22	72	30+	20	0	74	80	20.59	12.48	12.11	14	24	.0	0	8.7	SSE	*37	S	28	1	16	14	7.2	62
West Palm Beach	15	1015.3	1016.4	91	75	83.2	1.2	94	24+	71	31	27	0	73	78	5.97	-.73	2.00	14	16	.0	0	7.4	SSE	*31	NE	25	5	11	15	6.6	--
GEORGIA																																
Athens	798	987.4	1016.3	90	72	79.6	-1.2	99	1	65	31+	20	0	69	75	5.64	.83	2.63	10	12	.0	0	6.1	NE	*22	E	10	7	16	8	5.9	--
Atlanta	975	974.8	1015.4	90	71	80.3	.8	96	3+	67	8	17	0	67	69	2.25	-2.16	1.00	4	5	.0	0	7.9	NW	*23	NE	27+	6	19	6	5.8	65
Augusta	143	1008.1	1014.8	91	71	80.9	-.1	100	1	62	17	20	0	72	78	8.22	3.01	2.67	15	14	.0	0	5.2	SE	*35	WNW	2	1	13	17	7.3	--
Columbus	385	1001.1	------	93	71	82.3	1.4	98	21+	68	18+	28	0	--	--	3.42	-2.50	1.83	7	6	.0	0	6.3	---	*24	NW	22	4	16	11	6.4	--
Macon	356	1001.5	1015.1	93	72	82.8	.4	99	1	67	17	26	0	71	73	3.66	-1.68	1.36	13	12	.0	0	7.8	NE	26	SE	23+	3	16	12	6.5	58
Rome	637	992.5	------	94	67	80.5	.5	99	13+	61	31	28	0	65	64	1.32	-3.39	.46	7	8	.0	0	3.8	---	--	---	--	8	12	11	5.9	--
Savannah	48	1012.8	1015.4	91	72	81.2	.0	99	2	67	17	20	0	72	80	15.70	8.61	4.85	20	17	.0	0	7.3	SW	31	N	6	2	17	12	6.6	71
Thomasville	283	------	------	93	73	82.7	2.1	98	3	70	12	23	0	--	--	7.45	.43	1.71	16	15	.0	0	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

JULY 1960

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No of days							No. of days		Snow, Sleet				Fastest mile							
		0 Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F.	°F	°F		°F				°F	%	In.	In.	In			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
HAWAII																																
Hilo	31	1015.6	1016.9	83	68	75.7	0.9	87	13	64	5	0	0	72	76	9.68	-0.21	1.76	28	0	0.0	0	9.1	WSW	*24	E	9	0	17	14	6.9	44
Honolulu	7	1016.3	1016.8	86	71	79.8	1.0	87	30+	70	6+	0	0	65	64	.73	.39	.64	5	0	.0	0	13.1	NE	32	E	23	10	17	4	5.1	82
Lihue	113	1012.3	1017.6	85	73	78.8	1.4	87	28+	68	6	0	0	68	73	1.34	-.53	.26	17	0	.0	0	13.3	NE	26	NE	12	3	14	14	6.5	71
IDAHO																																
Boise	2842	918.7	1012.3	97	64	80.7	5.9	111	19	49	2	27	0	43	29	.95	.77	.94	1	2	.0	0	7.2	WNW	24	S	30	19	7	5	3.0	86
Idaho Falls 46W (R)	4933	851.0	1015.2	91	52	71.8	2.6	101	20	41	3	20	0	--	--	.07	-.37	.03	3	2	0	0	7.6	NE	@32	N	13	--	--	--	----	--
Idaho Falls 42NW (R)	4790	------	------	93	52	72.4	4.3	103	21+	41	24	21	0	--	--	.07	-.44	.07	1	--	---	--	4.6	NE	@22	SSW	9	--	--	--	----	--
Lewiston	1413	963.4	1013.8	95	60	77.7	2.5	108	18	48	2	26	0	--	--	.03	-.39	.03	1	1	.0	0	----	---	--	---	--	25	2	4	2.1	--
Pocatello	4444	864.9	1013.7	92	57	74.9	2.2	101	20	49	25+	23	0	40	31	.19	-.57	.09	4	7	.0	0	11.0	WSW	38	W	9	11	15	5	4.3	82
ILLINOIS																																
Cairo (U)	314	1002.7	------	88	70	79.2	-2.0	93	25+	63	15+	13	0	--	--	1.34	-1.26	.77	9	6	.0	0	5.9	⦶ N	25	NW	25	6	17	8	5.7	63
Chicago (O'Hare)	656	991.5	1016.1	82	62	72.1	----	92	25+	55	15+	5	0	61	68	4.27	----	1.64	10	5	.0	0	10.0	SW	*33	N	13	13	13	5	4.6	--
Chicago (Midway)	610	993.6	1016.1	83	64	73.7	-.9	95	22	56	4	5	0	59	63	3.58	.85	2.06	9	4	.0	0	8.5	SW	31	W	29+	12	14	5	4.4	60
Moline	589	993.6	1015.5	84	62	72.8	-2.7	94	22	51	15+	5	0	61	70	3.40	.18	1.57	7	5	.0	0	6.0	WSW	41	NW	26	12	14	5	4.8	78
Peoria	654	994.2	1016.6	83	61	72.0	-3.7	92	23	51	4	2	0	62	71	3.51	-.19	1.26	8	7	.0	0	6.8	S	36	N	23	10	16	5	4.8	71
Rockford	728	989.5	1016.5	83	60	71.4	-2.8	92	29	52	5+	3	0	59	68	3.79	.46	1.16	9	4	.0	0	7.9	WSW	*23	NE	22+	12	16	3	4.3	--
Springfield	589	992.9	1015.9	85	64	74.4	-1.9	92	24+	54	5	7	0	64	72	3.73	.62	1.30	7	4	.0	0	6.8	SW	38	W	25	12	12	7	5.0	75
INDIANA																																
Evansville	383	1000.0	1015.5	86	66	75.7	-2.5	93	25	57	16	7	0	65	73	1.83	-1.17	.94	6	5	.0	0	6.0	NNW	29	SW	25	7	17	7	5.4	78
Fort Wayne	801	985.4	1016.3	82	60	70.7	-2.8	90	22	51	31	1	0	59	68	2.55	-.73	1.23	7	4	.0	0	8.8	SW	40	W	2	11	16	4	4.5	83
Indianapolis	793	986.5	1016.2	82	62	71.6	-4.4	88	25+	53	5	0	0	63	75	3.27	.24	1.10	6	4	.0	0	4.9	N	26	NW	26	12	11	8	5.0	75
South Bend	768	987.8	1015.9	81	60	70.4	-3.0	92	22	49	15	3	0	59	69	1.92	-1.12	1.09	7	4	.0	0	7.8	NNW	*39	N	22	12	17	2	4.0	--
IOWA																																
Burlington	694	991.2	1016.5	84	63	73.8	-3.0	93	23+	53	5+	8	0	62	70	2.44	-.99	1.37	7	7	.0	0	8.2	SSW	21	N	5+	10	16	5	4.8	84
Des Moines	948	986.1	1017.0	85	64	74.4	-1.8	94	23+	54	31	10	0	62	69	1.99	-.95	1.01	5	2	.0	0	8.3	S	29	S	2	14	12	5	4.2	73
Dubuque	1065	991.5	1017.2	81	59	69.9	-3.4	90	22	48	4	1	0	58	64	2.49	-.92	1.72	7	5	.0	0	----	---	--	---	--	11	13	7	5.0	--
Sioux City	1094	975.3	1015.8	88	63	75.3	-1.0	99	11	52	31	13	0	61	66	2.60	-.32	2.56	3	2	.0	0	9.2	SSE	47	NW	26	16	11	4	3.8	87
Waterloo	870	984.1	1016.0	83	59	71.1	-3.4	94	22	48	31	3	0	60	70	2.20	-1.56	1.06	10	4	.0	0	5.8	S	*25	ENE	22	15	11	5	4.2	--
KANSAS																																
Concordia (U)	1375	966.8	------	87	66	76.6	-3.4	104	2	55	31	8	0	--	68	1.39	-2.00	.39	7	4	.0	0	5.1	⦶ SE	45	SE	16	12	10	9	4.7	69
Dodge City	2594	929.2	1015.3	90	64	77.1	-2.8	106	27	58	21+	16	0	59	59	.47	-2.18	.26	6	7	.0	0	13.8	SSE	45	N	3	13	11	7	4.8	70
Goodland	3645	890.6	1015.2	90	60	75.0	-.6	102	26	54	30+	19	0	53	54	1.21	-1.59	1.04	3	10	.0	0	11.5	SSE	*29	S	31	20	5	6	3.6	--
Topeka	877	980.7	1015.9	86	64	75.0	-4.2	98	11+	53	31	6	0	65	75	3.16	-.09	1.22	8	11	.0	0	8.4	NNE	38	N	10	10	7	14	5.8	61
Wichita	1321	967.2	1015.1	87	67	76.7	-4.2	102	2	55	31	12	0	64	71	5.57	2.14	1.89	13	12	.0	0	9.9	S	39	N	12	10	7	14	5.7	54
KENTUCKY																																
Lexington	979	981.1	1016.5	84	65	74.7	-1.0	91	26+	57	15	5	0	65	74	1.94	-2.31	.73	5	4	.0	0	6.7	NE	--	---	--	10	13	8	5.2	--
Louisville	474	996.5	1015.7	84	64	74.2	-3.7	91	25	57	16+	1	0	64	72	1.99	-1.09	1.16	5	3	.0	0	4.5	NNE	24	W	3	6	18	7	5.2	53
LOUISIANA																																
Alexandria	107	1010.5	1015.0	94	73	83.3	----	98	12+	68	20	29	0	72	73	6.18	----	2.66	7	14	.0	0	5.5	SW	--	---	--	11	17	3	4.5	--
Baton Rouge	64	1012.5	1015.4	96	75	85.7	4.6	101	12	71	31+	31	0	71	69	5.50	-.37	1.77	8	17	.0	0	7.8	W	--	---	--	6	22	3	5.0	--
Lake Charles	12	1013.2	1014.8	93	74	83.7	1.5	100	12	71	19+	28	0	72	74	5.05	-1.88	3.20	8	14	.0	0	3.9	SW	*21	WSW	18+	4	16	11	6.0	--
New Orleans (U)	9	------	------	94	77	85.9	2.8	99	12	70	30	30	0	--	71	5.18	-1.91	1.15	14	16	.0	0	4.8	---	20	NW	30+	6	23	2	4.8	62
New Orleans	3	1012.9	1014.9	94	74	83.9	2.1	97	30+	69	18	30	0	75	79	4.26	-1.63	3.50	9	17	.0	0	5.9	W	*23	SSE	17	9	18	4	4.7	--
Shreveport	252	1006.1	1015.4	93	73	82.9	-.6	100	13	66	9	27	0	70	68	2.88	-.82	1.47	7	7	.0	0	8.5	SSW	--	---	--	15	9	7	4.3	81
MAINE																																
Caribou	624	988.8	1011.5	75	53	63.5	-.5	82	26+	44	15	0	0	55	76	3.39	-.64	.77	19	6	.0	0	10.0	WSW	*32	WSW	20	2	11	18	7.4	--
Portland	61	1009.2	1013.4	79	55	66.7	-1.1	89	12	45	10+	0	0	58	75	3.06	.23	1.54	10	3	.0	0	9.1	S	35	SE	30	11	12	8	5.2	76
MARYLAND																																
Baltimore (U)	14	------	------	86	70	77.7	-.8	96	23	62	15	5	0	--	--	6.12	2.18	1.82	8	--	.0	0	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1010.8	1015.7	85	64	74.6	-1.7	94	23+	55	8	4	0	64	72	8.18	4.24	3.23	9	4	.0	0	8.5	W	26	NW	27	13	8	10	4.9	69
Frederick	294	------	------	84	61	72.1	-4.6	91	23	52	8	1	0	--	--	3.09	-.56	1.39	7	--	.0	0	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.(R)	629	990.4	------	79	60	69.5	----	90	12	51	6	1	0	--	--	5.40	1.69	1.97	11	--	.0	0	13.6	SW	41	ESE	30	--	--	--	----	68
Boston	15	1011.5	1013.6	82	64	73.1	.9	92	12	59	15+	2	0	58	64	5.18	2.00	2.15	11	3	.0	0	11.4	WSW	30	W	30+	9	16	6	5.3	73
Nantucket	43	1014.2	1014.9	74	60	67.1	.0	80	1	55	15	0	0	61	83	1.91	-.92	1.31	7	1	.0	0	11.8	SW	42	S	30	8	14	9	5.5	71
Pittsfield	1170	------	------	76	54	64.8	-2.8	84	29+	43	5	0	0	--	--	4.73	-.22	1.94	10	--	.0	0	----	---	--	---	--	--	--	--	----	--
Worcester	986	978.1	1014.6	77	58	67.7	-2.5	88	12	48	6	0	0	57	71	7.50	3.72	2.32	11	5	.0	0	6.3	WSW	*20	WNW	6	8	13	10	5.6	--
MICHIGAN																																
Alpena	689	990.5	------	78	50	63.5	-4.0	91	29	39	1	1	0	54	65	2.90	.04	2.34	9	5	.0	0	6.4	⦶ W	23	NW	3	14	11	6	4.6	68
Detroit (City AP)	619	989.5	1015.9	82	60	70.8	-2.3	92	22	50	15	1	0	56	61	1.44	-1.47	.41	8	4	.0	0	8.5	W	77	NW	22	11	14	6	4.6	70
Detroit (M. Wayne Co.)	680	991.9	1015.9	81	58	69.5	----	90	22	49	15	1	0	58	67	2.19	----	.83	8	5	.0	0	8.8	WSW	--	---	--	14	12	5	4.5	--
Detroit (Willow Run)	722	987.5	1015.6	82	60	71.0	-2.5	90	29+	51	15	2	0	56	63	3.27	.78	.94	8	6	.0	0	9.4	W	*27	WNW	4	13	13	5	4.4	--
Escanaba (U)	594	993.2	------	74	56	64.5	-2.4	87	8	44	1	0	0	--	75	5.74	2.52	2.29	11	7	.0	0	8.8	---	29	N	19	15	9	7	4.7	63
Flint	761	988.2	1016.1	81	54	67.4	-3.6	94	22	41	15	1	0	55	65	1.19	-1.70	.41	6	5	.0	0	7.6	WSW	*29	S	3	10	16	5	4.8	--
Grand Rapids	681	991.2	1016.1	81	57	69.2	-2.3	90	29+	47	4	2	0	56	66	3.82	1.17	1.64	10	7	.0	0	7.4	WNW	29	S	3	15	12	4	4.0	81
Lansing	852	984.1	1015.9	81	55	67.8	-3.3	90	22	44	15	1	0	57	68	2.25	-.03	.76	9	5	.0	0	10.4	W	38	S	3	11	15	5	4.4	80
Marquette (U)	677	987.8	------	74	56	64.9	-1.2	90	25	43	1	1	0	--	65	4.24	1.11	1.89	10	5	.0	0	6.9	⦶ W	27	SW	21	9	15	7	5.3	75
Muskegon	627	992.9	1016.0	79	57	68.2	-1.7	90	25	47	4	1	0	58	71	3.06	.94	1.39	7	11	.0	0	7.5	W	*35	SW	30	18	10	3	3.4	--
Sault Ste. Marie	721	992.2	1014.9	73	51	61.7	-2.2	84	9	41	1	0	0	54	78	3.04	.55	.83	12	3	.0	0	7.8	WNW	*24	NW	3	6	18	7	5.1	68
MINNESOTA																																
Duluth	1409	974.6	1015.7	78	54	65.9	-.5	93	21	42	4	1	0	55	70	2.81	-.83	-.34	8	10	.0	0	10.9	SW	41	NW	29	11	13	7	5.0	79
Intern'l Falls	1179	974.3	1015.3	79	51	65.2	-.6	90	21+	38	14	2	0	53	67	3.06	-.38	1.57	9	10	.0	0	7.4	NW	*27	NW	29	11	10	10	5.3	--
Minneapolis	830	982.7	1015.6	83	60	71.7	-2.4	95	21	49	31+	7	0	61	69	1.93	-.74	.72	10	6	.0	0	8.0	S	28	NW	25	20	6	5	3.7	71
Rochester	1017	979.7	1016.4	81	58	69.7	-2.1	92	21	45	31	3	0	60	72	1.74	-1.73	1.29	6	3	.0	0	8.0	SW	--	---	--	19	5	7	3.9	--
St. Cloud	1034	978.0	1015.5	83	58	70.6	.0	95	21	44	4	4	0	58	68	2.35	-.70	.79	9	7	.0	0	----	---	--	---	--	17	10	4	3.5	--
MISSISSIPPI																																
Jackson	305	1003.2	1015.1	96	72	83.9	1.8	100	22+	67	7	31	0	70	67	1.09	-3.52	.42	6	11	.0	0	4.8	NW	34	NE	28+	11	17	3	4.4	77
Meridian	292	1001.5	1015.2	96	70	83.2	2.3	101	13	67	16	31	0	70	74	1.32	-4.64	.42	7	10	.0	0	5.4	SW	*25	NE	11	9	18	4	4.8	--
Vicksburg (U)	234	1006.4	------	92	74	82.9	1.4	96	26+	68	8+	23	0	--	--	1.00	-2.96	.32	6	11	.0	0	5.9	---	27	NW	5	8	22	1	4.4	80
MISSOURI																																
Columbia	778	987.1	1015.4	85	64	74.9	-2.9	92	26+	53	5	9	0	64	72	2.65	-.36	2.51	7	7	.0	0	7.9	ESE	22	SE	2	8	13	10	5.9	75
Kansas City	741	981.7	1015.7	86	70	77.8	-3.1	100	11	59	31	8	0	64	65	2.49	-.34	.78	8	6	.0	0	7.9	ENE	26	SW	2	9	11	11	6.1	70
St. Joseph	809	981.7	------	86	65	75.5	-4.6	97	11	55	31	7	0	--	--	2.49	-.60	1.78	10	7	.0	0	7.0	S	*28	S	2	12	9	10	5.3	--
St. Louis (RFC)	465	------	------	85	70	77.3	-3.3	91	29+	61	14	5	0	--	--	1.98	-.93	1.34	6	--	.0	0	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
		ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	With thunderstorms	Snow, Sleet: Total	Max depth on ground	Average hourly speed	Prevailing direction	Fastest mile: Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
MISSOURI (Cont'd.)																																
St. Louis	552	995.6	1016.1	85	68	76.2	-3.5	93	21	58	5	5	0	65	69	2.27	-0.31	0.86	8	5	0.0	0	6.5	SE	22	W	10	4	13	14	6.2	76
Springfield	1265	969.2	1016.1	86	64	75.2	-2.3	100	11	52	5	9	0	64	74	4.37	1.20	2.09	9	8	0	0	9.2	SSE	38	NE	17	8	11	12	5.8	60
MONTANA																																
Billings	3567	892.7	1013.3	93	62	77.9	4.6	105	19	50	3	24	0	43	32	.17	-.97	.08	5	4	.0	0	9.1	SW	32	NW	9	15	14	2	3.9	81
Butte	5530	834.1	1018.1	84	46	65.1	2.7	96	20+	35	2	7	0	38	--	.31	-.93	.14	8	12	.0	0	7.3	NW	*29	SSE	22	10	16	5	4.3	--
Glasgow	2277	940.7	1013.6	91	60	75.5	3.3	104	19	47	3	20	0	46	41	.55	-.92	.25	6	7	.0	0	----	---	--	---	--	13	14	4	4.1	--
Great Falls	3664	889.3	1014.3	90	59	74.5	4.9	102	22	47	5+	18	0	35	54	.39	-.96	.31	3	5	.0	0	8.0	SW	51	SW	22	18	11	2	3.5	83
Havre (U)	2488	926.9	1013.9	92	59	75.8	4.5	105	22	47	3	21	0	--	--	.10	-1.37	.10	2	4	.0	0	7.3	I W	43	SW	11	22	7	2	2.8	91
Helena	3893	876.1	1014.7	89	54	71.5	3.5	102	19	45	5+	16	0	41	36	1.02	.04	.52	7	11	0	0	7.6	WSW	60	SW	20	14	15	2	3.5	90
Kalispell	2965	------	------	91	48	69.8	3.8	104	19	37	24	21	0	--	--	.03	-1.13	.02	3	2	0	0	----	---	--	---	--	24	6	1	1.8	--
Miles City	2629	922.5	1013.9	95	65	80.2	5.2	109	20	48	5	25	0	47	--	.33	-1.08	.23	--	9	0	0	9.1	SE	*46	N	11	15	12	4	3.7	--
Missoula	3200	903.5	1015.8	94	51	72.2	3.8	105	19	38	2	24	0	41	38	.13	-.70	.06	4	3	.0	0	7.0	NW	30	W	1	23	6	2	2.5	91
NEBRASKA																																
Grand Island	1841	950.6	1015.8	86	62	74.0	-4.9	100	11	55	31+	13	0	61	68	3.16	.53	1.35	8	9	.0	0	8.1	S	--	---	--	15	9	7	3.9	--
Lincoln (U)	1166	------	------	88	65	76.5	-2.7	103	11	53	31	13	0	--	--	3.42	.32	1.68	7	6	.0	0	7.9	I S	34	S	27	12	12	7	4.7	81
Norfolk	1544	960.4	1015.3	86	63	74.4	-1.8	101	11	52	31+	10	0	61	64	3.17	.14	1.03	8	9	.0	0	----	---	--	---	--	15	11	5	3.9	--
North Platte	2779	917.7	1014.5	88	60	74.2	-1.6	98	10	52	30	16	0	58	61	1.33	-1.07	.50	7	7	.0	0	10.4	SSE	32	NE	16	16	10	5	3.9	76
Omaha	978	976.6	1016.0	86	65	75.8	-2.7	97	11	54	31	10	0	63	68	1.85	-1.49	.69	5	3	.0	0	8.5	SSE	40	N	26	15	11	5	4.2	80
Omaha N.Omaha AP	1323	968.8	------	84	64	73.7	-2.7	94	11	56	31+	5	0	--	--	2.81	-.53	1.38	8	6	.0	0	----	---	--	---	--	10	16	5	4.7	--
Scottsbluff	3950	881.1	1014.0	91	58	74.5	-.1	100	23	52	6	19	0	52	50	.55	-.90	.22	6	4	.0	0	10.2	ESE	*52	WSW	14	18	9	4	3.8	--
Valentine	2587	925.2	------	90	61	75.4	.8	102	10	50	6	18	0	--	59	1.27	-1.43	.45	4	8	.0	0	10.4	⦶ S	29	N	29+	18	10	3	3.6	84
NEVADA																																
Elko	5075	846.9	1014.0	92	51	71.8	1.6	102	19	41	4	18	0	32	27	.49	.12	.15	12	8	.0	0	6.2	E	*32	WNW	30	13	14	4	4.6	--
Ely	6257	812.7	1008.1	88	48	68.0	-.4	97	16	40	5	14	0	30	28	.26	-.29	.12	6	13	.0	0	9.9	S	46	E	20	7	17	7	5.1	79
Las Vegas	2162	944.8	1008.4	106	76	91.0	.5	113	17+	66	10	31	0	35	16	.41	-.05	.41	1	3	.0	0	10.0	SSW	*40	SE	20	18	11	2	2.9	92
Reno	4404	863.5	1014.8	93	48	70.4	.8	102	19+	33	11	24	0	43	42	.87	.64	.36	6	6	.0	0	5.2	S	40	W	29	14	11	6	3.6	84
Winnemucca	4299	869.3	1013.5	95	53	74.3	.1	105	18	42	16	26	0	32	25	.26	-.05	.20	4	6	.0	0	6.9	NNE	37	W	30	14	12	5	4.1	60
NEW HAMPSHIRE																																
Concord	339	1003.1	1013.9	82	55	68.5	-.5	92	12	46	10+	2	0	57	69	3.62	.05	1.17	9	1	.0	0	6.3	NW	32	E	30	11	3	7	5.0	70
Mt. Washington Obs.	6262	803.8	------	52	40	46.1	3.2	65	29	32	5	0	1	--	--	5.86	.50	3.02	19	3	.0	0	26.3	W	‡92	ESE	30	4	8	19	7.5	39
NEW JERSEY																																
Atlantic City (U)	30	------	------	78	67	72.4	-1.2	87	20	60	8+	0	0	--	--	5.87	2.09	2.95	12	--	.0	0	12.6	---	32	S	3	--	--	--	----	--
Atlantic City	58	1013.3	1015.5	83	65	73.7	-.6	91	23	57	6	1	0	63	72	5.84	2.14	2.45	7	3	.0	0	11.0	S	37	ENE	30	11	8	12	5.7	61
Newark	11	1013.6	1015.0	85	65	74.9	-.4	92	9	60	15+	2	0	60	62	6.39	2.19	2.54	8	5	.0	0	9.3	SW	*25	NNE	30	9	12	10	5.7	--
Trenton (U)	56	1007.4	-----	83	65	74.1	-1.2	90	12+	59	15	2	0	--	--	7.98	3.92	3.17	6	4	.0	0	8.1	---	31	N	30	7	13	11	5.9	73
NEW MEXICO																																
Albuquerque	5310	851.0	1012.3	91	66	78.7	-.3	101	29	60	11+	22	0	50	43	.47	-.96	.23	6	6	.0	0	8.5	ESE	38	E	18	16	6	9	4.5	77
Clayton	4969	849.6	1015.2	84	59	71.7	-2.4	101	2	51	20	9	0	--	--	2.84	.28	.84	9	8	.0	0	----	---	--	---	--	9	15	7	5.2	--
Raton	6379	810.7	1015.6	83	53	67.9	-.7	94	2	46	18	6	0	--	--	3.93	1.43	1.23	15	18	.0	0	----	---	--	---	--	7	17	7	5.1	--
Roswell	3612	894.7	1012.9	93	65	78.9	-.1	104	29	58	19	23	0	59	57	3.31	1.50	1.84	8	5	.0	0	9.5	---	51	SW	8	11	10	10	5.1	--
Silver City	5371	836.8	1012.2	89	62	75.8	----	102	1	58	21+	17	0	--	--	1.63	----	.72	11	14	.0	0	----	---	--	---	--	10	13	8	5.0	--
NEW YORK																																
Albany	277	1010.5	1014.4	81	58	69.5	-1.9	91	29	49	8+	1	0	59	70	5.89	2.59	2.70	12	9	.0	0	8.0	S	33	SW	3	6	15	10	6.0	67
Binghamton	1601	956.9	1015.4	76	58	66.8	-2.3	85	29	48	4	0	0	56	74	2.63	-1.19	.85	10	4	.0	0	7.6	NNW	33	SW	26	4	17	10	6.4	60
Buffalo	693	987.9	1015.7	79	59	69.1	-1.5	92	26	49	15	3	0	56	66	1.89	-.54	1.14	8	4	.0	0	8.9	WSW	43	SW	22	10	15	6	4.9	76
New York (U)	10	1013.0	------	80	66	72.6	-2.0	86	9	60	15+	0	0	--	--	9.97	5.73	4.90	9	3	.0	0	11.3	---	36	NW	30	9	13	9	5.3	74
New York (Laguardia)	19	1012.9	1015.0	83	68	75.3	-.6	90	12+	62	15	2	0	60	63	9.27	5.15	3.46	9	5	.0	0	11.7	S	56	NE	30	10	12	9	5.4	--
Rochester	543	995.8	1015.0	80	57	68.5	-2.7	90	26	47	4	1	0	56	66	1.39	-1.70	.56	7	3	.0	0	9.9	WSW	38	NE	30	9	12	10	5.7	83
Schenectady	217	------	------	81	60	70.7	-2.0	90	29	52	7	1	0	--	--	5.82	2.25	2.45	13	5	0	0	----	---	--	---	--	19	8	4	3.3	--
Syracuse	424	992.7	1014.4	80	59	69.4	-3.1	89	29	51	8+	0	0	57	64	1.03	-2.23	.31	9	3	0	0	9.6	WSW	35	W	5	10	12	9	5.4	70
NORTH CAROLINA																																
Asheville (U)	2203	938.3	------	83	64	73.4	-.4	90	22	58	15	1	0	--	--	2.85	-1.65	1.34	12	9	.0	0	5.4	---	29	NW	3+	4	17	10	6.3	44
Cape Hatteras(R)	7	1014.8	1015.6	84	71	77.7	-.8	90	20	61	10	1	0	71	82	7.25	.77	1.64	13	11	.0	0	9.0	SW	58	S	29	3	12	16	7.2	56
Charlotte	725	988.0	1015.8	89	69	78.9	.3	96	3	62	30	18	0	68	74	1.74	-2.93	.66	11	7	.0	0	8.0	SSE	44	N	1	5	9	17	6.9	67
Greensboro	891	985.0	1016.6	85	66	75.7	-1.5	92	3	60	17+	5	0	66	75	4.24	-.70	2.04	11	11	.0	0	6.5	WSW	29	N	3	7	15	9	6.0	69
Raleigh	433	1003.8	1016.0	86	66	76.1	-2.4	93	3	58	16	6	0	67	78	7.47	2.02	2.60	10	7	.0	0	6.3	SSW	*29	NW	5	11	8	12	5.9	62
Wilmington	30	1013.9	1015.4	87	71	79.0	-1.0	94	3+	65	10	9	0	72	84	10.28	2.12	3.91	16	12	.0	0	7.7	SSW	31	SW	29	4	10	17	6.9	48
Winston-Salem	967	981.2	1016.2	87	67	76.8	-.7	94	24	60	16	10	0	65	71	3.74	-.83	1.86	16	11	.0	0	7.3	WSW	*50	NE	31	6	16	9	6.0	--
NORTH DAKOTA																																
Bismarck	1650	955.3	1014.5	90	58	74.2	2.1	108	20	43	30	19	0	53	50	.68	-1.65	.45	3	5	.0	0	9.6	ENE	45	W	2	12	14	5	4.1	88
Devils Lake (U)	1471	962.1	------	85	57	70.8	1.5	99	20	44	5	8	0	--	61	1.63	-1.04	1.16	8	5	.0	0	6.9	⦶ N	34	N	29	16	10	5	3.5	78
Fargo	895	981.4	1015.3	85	57	71.4	.1	100	20	44	4	7	0	59	67	2.40	.09	1.39	4	5	.0	0	12.8	S	57	N	29	15	11	5	4.0	78
Williston (U)	1877	947.9	1014.5	88	60	74.1	3.2	106	20	48	5	14	0	54	52	.89	-1.24	.35	6	5	.0	0	5.8	⦶ NE	28	NW	3	14	10	7	4.2	75
OHIO																																
Akron	1210	978.6	1016.7	80	58	68.7	-3.7	89	26	51	21+	0	0	58	70	4.15	-.05	1.17	10	8	.0	0	7.4	N	--	---	--	11	13	7	4.4	--
Cincinnati Obs.	761	------	------	85	64	74.4	-2.2	90	30+	54	15	6	0	--	--	4.97	1.27	2.35	9	5	.0	0	4.1	---	18	SE	24+	--	--	--	----	75
Cincinnati	869	984.7	1016.5	85	63	74.4	-.7	93	25	53	15	8	0	62	69	3.15	-.60	1.30	5	4	.0	0	5.7	N	*29	WSW	26	7	17	7	5.5	--
Cleveland	787	988.2	1016.0	78	57	67.6	-6.1	88	26+	48	21+	0	0	59	73	3.33	.29	.84	9	6	0	0	8.5	S	29	S	26	15	10	6	4.3	66
Columbus (U)	724	------	------	83	65	74.0	-1.8	91	25	55	15	2	0	--	--	5.54	2.01	1.56	8	7	0	0	----	---	--	---	--	--	--	--	----	--
Columbus	815	986.1	1016.0	83	60	71.8	-2.6	92	26	52	21+	4	0	61	71	4.54	.69	1.64	9	8	0	0	4.7	N	27	SE	3	13	12	6	4.7	78
Dayton	1002	980.3	1016.3	83	62	72.6	-2.4	90	23+	53	4	2	0	60	67	3.04	-.25	2.49	5	3	.0	0	7.4	N	38	NW	3	11	15	5	4.7	80
Mansfield	1296	------	------	79	59	69.1	----	87	30+	50	15	0	0	--	--	3.04	----	.80	10	5	.0	0	----	---	--	---	--	12	11	8	4.7	--
Sandusky (U)	603	994.1	------	82	63	72.2	-2.4	92	22	53	5	1	0	--	--	3.91	.46	1.24	8	7	0	0	6.0	---	35	W	26	18	11	2	2.8	84
Toledo	676	990.7	1016.2	82	57	69.8	-3.3	92	22	49	15	2	0	59	70	3.62	.97	1.92	8	10	0	0	5.3	WSW	23	N	3	14	13	4	4.2	78
Youngstown	1178	974.0	1016.3	79	56	67.9	-4.4	88	26	46	15	0	0	57	71	4.80	.64	1.10	11	6	.0	0	7.9	N	*37	NW	30	10	15	6	5.1	--
OKLAHOMA																																
Oklahoma City	1280	972.6	1015.2	88	69	78.2	-3.9	98	27+	60	31+	12	0	67	72	7.69	5.54	3.52	9	9	.0	0	10.6	SSE	73	NW	29	13	9	9	5.0	64
Tulsa	672	990.9	1015.1	89	69	79.1	-3.0	100	12	58	15	17	0	69	75	9.01	6.32	3.25	10	9	.0	0	6.7	S	42	NE	27	10	11	10	5.4	51
OREGON																																
Astoria	8	1019.3	1019.7	68	50	59.0	-1.8	83	5	43	2	0	0	52	80	.01	-1.06	T	1	0	0	0	11.0	NNW	*23	NNW	22+	8	16	7	5.2	--
Burns (U)	4140	874.7	1014.2	91	56	73.2	3.4	101	18	42	2	19	0	39	33	.68	.43	.53	3	4	.0	0	----	---	--	---	--	20	7	4	2.9	--
Eugene	361	1003.7	1017.2	86	51	68.5	1.9	100	6	42	9	11	0	--	--	T	-.26	T	0	0	0	0	9.5	---	*26	N	23	23	5	3	2.0	--
Meacham	4050	------	------	85	56	70.4	7.2	103	18	40	2	9	0	--	--	.73	.27	1.04	2	2	.0	0	----	---	--	---	--	25	4	2	1.7	--
Medford	1312	968.2	1015.1	94	57	75.5	3.7	105	28	48	2	23	0	50	45	.09	-.08	.07	3	3	0	0	5.9	WNW	*17	WNW	31+	26	4	1	1.3	--
Pendleton	1492	961.7	1014.1	95	62	78.3	3.8	108	18	47	2	25	0	43	31	.02	-.24	.02	1	0	.0	0	10.5	WNW	*32	NW	26	26	4	1	1.4	--
Portland	21	1011.5	1017.2	83	55	69.1	1.8	97	6	47	23+	6	0	50	55	T	-.42	T	0	0	.0	0	7.4	NW	18	NW	8+	23	4	4	2.7	80
Roseburg	505	998.3	1016.6	89	54	71.4	4.2	103	28	45	11+	14	0	--	--	T	-.20	T	0	0	.0	0	6.4	© N	23	NW	29	25	4	2	1.5	94
Salem	195	1010.5	1017.8	86	49	67.6	-.1	101	6	39	9	10	0	50	58	T	-.32	T	0	0	.0	0	5.8	N	*21	N	21	23	4	4	2.1	--
Sexton Summit(R)	3836	886.2	1013.9	80	56	67.5	4.3	93	28	42	2+	3	0	--	--	.01	-.31	.01	1	0	.0	0	13.0	N	--	---	--	27	3	1	1.1	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

JULY 1960

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb	°F.	°F	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
PACIFIC AREA																																
Canton Island	8	1008.8	1009.2	90	79	84.4	0.2	92	12	75	15	24	0	74	76	2.22	-0.11	1.15	14	0	0.0	0	14.2	E	*26	ENE	26	0	1	30	9.9	--
Guam (R)	361	------	------	87	73	79.7	.1	88	30+	68	2	0	0	--	--	7.93	-3.49	1.72	26	8	.0	0	4.4	Φ E	19	E	17	--	--	--	----	50
Johnston Island	7	1013.5	1014.1	86	77	81.2	----	88	23	72	19	0	0	71	74	.89	----	.31	12	0	.0	0	14.0	Φ E	26	E	30+	0	22	9	6.7	89
Koror (R)	94	1006.1	1009.8	88	76	82.1	1.6	90	29+	73	5	[illegible]	0	77	87	13.41	-5.40	2.70	24	0	.0	0	2.9	S	17	NW	27+	0	1	30	9.7	53
Kwajalein	8	1010.2	1010.5	85	78	81.7	----	87	24+	74	7	0	0	78	85	8.55	----	2.46	25	4	.0	0	9.9	E	*35	ENE	22	1	7	23	8.5	--
Majuro	10	1009.5	1009.8	85	77	81.1	----	87	29	73	22	0	0	--	--	14.10	----	3.61	27	0	.0	0	9.3	Φ E	28	E	21	--	--	--	----	--
Ponape (R)	120	1004.4	1009.7	87	74	80.5	.1	89	24+	70	22	0	0	75	82	12.01	-5.05	2.30	26	8	.0	0	3.5	E	21	E	30	0	5	26	8.9	65
Truk, Moen Is.	5	1009.5	1009.8	88	76	81.9	1.6	91	23	74	31+	4	0	76	83	9.45	-4.01	2.87	24	6	.0	0	3.7	SE	25	SE	22	0	8	23	8.5	64
Wake Island	11	1013.9	1014.3	87	78	82.6	.6	89	18+	71	9	0	0	74	78	3.10	-2.32	1.15	22	3	.0	0	14.0	ENE	*25	ESE	23	6	14	11	6.1	--
Yap (R)	55	1007.5	1009.5	88	76	81.8	.1	90	20+	73	7	2	0	77	84	11.45	-5.15	2.81	25	1	.0	0	3.5	E	28	SW	31	0	6	25	8.9	58
PENNSYLVANIA																																
Allentown	376	1001.4	1015.6	82	60	71.1	-3.0	89	9	54	8+	0	0	61	72	6.64	1.86	2.06	9	4	.0	0	7.0	WSW	*35	W	3	13	9	9	5.2	--
Erie	732	------	1015.7	78	59	68.4	-2.0	89	26	49	4	0	0	57	68	2.95	-.24	.95	10	3	.0	0	9.8	SSE	*40	SSW	3	12	14	5	4.3	--
Harrisburg	335	1001.5	1015.3	83	62	72.9	-2.5	90	12	56	16+	1	0	59	65	4.73	1.09	2.32	9	6	.0	0	5.3	WNW	22	NW	30	11	9	11	5.5	66
Philadelphia (U)	35	------	------	84	67	75.7	-1.5	91	23	60	15	0	0	--	--	----	----	----	--	--	---	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1010.5	1014.9	84	63	73.3	-3.0	91	9	52	6	1	0	62	71	5.52	1.32	2.25	8	3	.0	0	7.5	WSW	31	NE	14	9	11	11	5.7	68
Pittsburgh (U)	749	------	------	82	62	72.1	-3.3	90	26	54	7	1	0	--	--	2.90	-.82	.76	13	--	.0	0	----	---	--	---	--	--	--	--	----	61
Pittsburgh	1151	986.1	1016.9	80	57	68.6	-3.7	90	26	48	16	1	0	58	72	3.46	-.45	.91	10	7	.0	0	6.0	NW	*29	WSW	26	8	14	9	5.8	70
Reading (U)	266	1002.9	------	84	65	74.0	-1.7	90	13	57	8	1	0	--	--	4.37	-.06	1.88	8	4	.0	0	8.2	---	29	W	19	10	9	12	5.8	56
Scranton	940	981.6	1015.7	79	58	68.8	-3.4	87	13+	51	21	0	0	58	71	5.55	.22	1.18	10	7	.0	0	7.6	ESE	42	NW	3	8	11	11	5.6	60
Williamsport	527	996.8	1015.7	82	58	69.8	-3.5	89	12	50	5	0	0	59	73	4.64	.93	1.18	11	7	.0	0	6.6	W	*29	SSE	27	6	14	11	5.8	--
RHODE ISLAND																																
Block Island	110	1009.8	------	75	62	68.5	-.6	81	20	57	7+	0	0	--	--	4.14	1.59	1.55	[illegible]	2	.0	0	----	---	--	---	--	10	11	10	5.6	--
Providence	55	1008.4	1014.5	81	61	71.0	.0	90	12	55	16	1	0	60	71	4.61	1.55	2.21	8	4	.0	0	10.5	S	*28	SSE	30	13	11	7	4.8	72
SOUTH CAROLINA																																
Charleston (U)	9	------	------	86	75	80.8	-.7	96	3	68	30	6	0	--	--	11.74	3.70	3.06	14	--	.0	0	8.6	---	38	S	29	--	--	--	----	--
Charleston	41	1013.9	1015.9	89	71	80.1	.0	97	2	65	30+	14	0	74	86	14.10	6.06	5.81	15	14	.0	0	7.2	SW	38	N	11	1	10	20	7.8	61
Columbia	217	1002.3	1014.9	92	70	81.2	-.2	100	1	60	17	23	0	69	73	4.79	-1.77	1.49	10	13	.0	0	6.1	SW	35	NNE	3	4	14	13	6.4	65
Florence	146	1009.0	1014.9	88	70	79.0	-1.9	95	3	63	30	11	0	71	81	11.14	4.69	4.55	15	14	.0	0	6.8	NE	*23	WSW	14	4	15	12	6.5	--
Greenville	1018	979.0	1015.7	89	70	79.6	1.2	98	3	65	30	18	0	68	71	4.33	-.48	3.39	10	5	.0	0	6.4	NE	21	N	3+	6	11	14	6.5	59
Spartanburg	801	985.0	1015.7	88	69	78.2	-.7	96	3	65	30+	14	0	67	74	1.71	-2.99	.38	11	10	.0	0	7.9	NE	*23	NNE	3	7	10	14	6.4	--
SOUTH DAKOTA																																
Huron	1282	968.5	1014.8	91	60	75.2	-.2	103	28+	44	6	17	0	60	65	.61	-1.47	.32	6	6	.0	0	11.4	SSE	36	SE	20	16	12	3	3.7	84
Rapid City	3165	903.2	1014.5	92	61	76.8	4.5	105	20	52	5	20	0	48	42	.70	-1.36	.29	3	7	.0	0	10.4	N	36	NW	17+	14	13	4	4.1	68
Sioux Falls	1420	964.8	1015.5	86	62	73.9	-.9	97	22	49	1	11	0	59	63	.72	-2.28	.49	5	7	.0	0	9.0	S	*23	N	29+	15	11	5	3.9	--
TENNESSEE																																
Bristol	1519	962.9	1016.5	85	64	74.6	-.2	91	26	58	15	1	0	64	75	6.93	1.79	1.61	11	10	.0	0	5.0	NE	*35	NW	23	7	15	9	6.1	--
Chattanooga	670	988.1	1015.2	90	69	79.3	1.0	95	13+	64	15	18	0	68	74	2.72	-2.62	1.01	12	10	.0	0	5.9	NNE	31	NE	28	8	14	9	5.6	71
Knoxville	950	981.0	1015.9	89	68	78.4	.0	94	25	63	15	14	0	66	70	2.36	-2.36	2.07	[illegible]	[illegible]	.0	0	6.8	NE	33	NE	10	4	10	17	6.6	55
Memphis (U)	271	------	------	89	73	80.9	-.4	95	12	65	15	17	0	--	--	1.54	-1.56	1.09	4	--	.0	0	----	---	--	---	--	--	--	--	----	--
Memphis	263	1000.6	1015.2	92	71	81.8	.6	97	27+	62	18	22	0	68	67	1.30	-1.93	.72	6	7	.0	0	6.6	NE	31	NE	27+	9	13	[illegible]	5.3	79
Nashville	577	995.3	1015.2	89	68	78.3	-1.7	95	25	61	15	16	0	68	76	1.46	-2.50	.35	8	10	.0	0	4.9	N	33	NW	23	5	18	8	6.1	72
Oak Ridge	905	982.9	------	87	67	77.1	.4	93	31+	62	15+	10	0	--	--	3.76	-1.58	2.92	8	7	.0	0	3.6	---	*31	---	3+	[illegible]	12	10	5.5	--
TEXAS																																
Abilene	1759	953.9	1013.4	94	72	83.4	.3	103	29	64	31	25	0	65	59	4.51	2.46	3.74	7	7	.0	0	8.8	SSE	34	N	18	15	6	10	4.9	75
Amarillo	3590	891.3	1014.0	87	64	75.5	-2.3	100	28	58	15	14	0	59	62	7.59	5.23	2.33	10	7	.0	0	10.4	S	43	NW	3	13	12	6	4.5	78
Austin	615	992.9	1014.2	95	75	84.7	.6	103	29	72	20+	28	0	71	69	2.41	.23	1.36	6	6	.0	0	8.6	SSE	26	S	20	11	15	5	4.7	79
Brownsville	16	1011.5	1014.3	94	76	85.0	1.2	99	29+	73	29+	31	0	73	74	.34	-1.63	.29	4	1	.0	0	10.3	SSE	26	SE	3	15	15	1	3.8	89
Corpus Christi	41	1013.9	1015.0	93	75	84.2	.4	101	30	70	27	30	0	74	76	1.42	-.84	.93	3	5	.0	0	9.8	SSE	25	E	3	16	12	3	3.6	87
Dallas	487	996.3	1014.6	94	74	83.9	-1.6	103	13	68	18	26	0	69	65	7.34	5.37	4.78	10	10	.0	0	10.4	S	37	NE	28	13	7	11	4.7	70
Del Rio (U)	957	------	------	98	74	86.3	1.6	111	30	67	19	31	0	--	--	4.81	3.23	3.61	8	5	.0	0	----	---	--	---	--	--	--	--	----	--
El Paso	3920	887.2	1012.5	94	70	81.9	.6	109	3	63	14+	23	0	55	46	3.61	2.29	1.75	[illegible]	7	.0	0	10.3	SSE	45	E	12	12	11	8	5.1	71
Fort Worth	544	994.2	1014.5	95	74	84.6	-.5	103	13	70	19+	27	0	70	65	3.96	2.07	1.36	10	10	.0	0	11.9	S	*55	NNW	18	14	7	10	4.7	--
Galveston (U)	7	------	------	89	80	84.4	1.4	96	27	73	19+	8	0	--	--	.75	-4.05	.47	5	--	.0	0	9.8	---	30	NE	14	--	--	--	----	85
Galveston	5	1012.9	1015.2	91	79	84.9	1.6	95	27	74	19+	22	0	73	72	.63	-4.08	.31	4	9	.0	0	8.3	S	--	---	--	17	11	3	3.7	--
Houston (U)	41	1009.8	------	94	77	85.2	1.4	100	29	73	21+	29	0	--	--	5.48	1.03	2.32	8	12	.0	0	7.2	Φ S	26	E	14	10	16	5	4.5	79
Houston	50	1012.2	1014.8	94	76	84.7	2.1	98	30+	70	20	28	0	74	75	2.34	-2.45	.93	[illegible]	9	.0	0	8.4	S	--	---	--	12	13	6	4.6	--
Laredo	500	997.6	1012.7	101	77	89.2	1.5	110	30	71	17	31	0	67	56	1.87	.47	.94	6	6	.0	0	12.3	SE	*33	SE	19	17	11	3	3.4	--
Lubbock	3243	905.2	1014.4	89	66	77.7	-1.6	100	29+	61	31	17	0	62	63	5.37	3.48	1.75	8	8	.0	0	12.5	NE	*40	SSE	4	15	11	5	4.0	--
Midland	2854	916.4	1013.1	92	69	80.6	-1.4	105	29	63	5	19	0	61	57	3.33	1.52	2.24	8	8	.0	0	10.9	SE	*29	N	12	10	11	10	5.2	--
Port Arthur	16	1013.5	1015.0	93	74	83.6	1.9	98	29	69	14	28	0	74	78	6.03	-.77	2.78	11	12	.0	0	8.8	SSW	34	NE	30	8	17	6	5.1	74
San Angelo	1903	947.2	1012.9	99	73	85.9	3.2	111	29	65	31	27	0	64	55	1.53	-.04	.94	6	7	.0	0	10.0	S	*35	NE	13	12	12	7	4.7	--
San Antonio	792	989.8	1014.3	94	74	84.2	.0	104	30	71	18	28	0	70	68	1.31	-.60	.62	5	5	.0	0	8.9	SSE	26	NW	13	11	16	4	4.5	73
Victoria	110	1009.5	1014.3	93	75	84.0	-.8	98	29	71	18	29	0	73	71	4.14	.01	3.53	4	6	.0	0	9.2	SSE	‡32	NNE	18	13	15	[illegible]	4.1	--
Waco	500	993.6	1014.3	95	75	84.8	-.2	105	27	69	28	29	0	71	68	1.20	-.74	.51	4	6	.0	0	12.5	S	*40	N	28	15	9	7	4.4	--
Wichita Falls	1020	977.7	1013.6	95	72	83.5	-.3	106	27	64	31	22	0	67	63	2.91	.72	1.10	8	12	.0	0	9.3	S	*25	ENE	4	10	14	7	4.6	--
UTAH																																
Milford	5028	846.3	1013.5	96	57	76.4	2.4	104	26	48	11+	29	0	--	--	.12	-.65	.11	2	7	.0	0	----	---	--	---	--	21	9	1	3.1	--
Salt Lake City	4220	868.3	1012.3	98	64	81.2	4.6	107	26	53	5	31	0	41	28	.02	-.59	.02	1	6	.0	0	8.2	SSE	32	S	30	10	19	2	3.9	84
Wendover	4237	871.3	1010.5	95	71	83.1	----	103	19	65	31+	28	0	--	--	.09	----	.05	2	7	.0	0	----	---	--	---	--	15	11	5	4.1	--
VERMONT																																
Burlington	331	999.0	1013.6	79	55	66.9	-3.5	91	12	44	15	3	0	56	69	3.37	-.38	1.24	12	3	.0	0	6.2	SSW	32	SW	27	7	13	11	6.2	66
VIRGINIA																																
Lynchburg	947	982.5	------	86	65	75.6	-.4	96	23	59	16	9	0	--	--	2.33	-1.82	.75	9	9	.0	0	6.8	---	30	SW	31	14	8	5	5.0	67
Norfolk	26	1014.8	1016.2	87	69	77.8	.3	97	23	60	17	8	0	65	69	4.78	-1.27	2.55	10	3	.0	0	8.8	SW	37	E	29	10	14	7	5.3	58
Richmond	162	1010.0	1016.2	87	65	76.3	-1.2	99	23	55	16	9	0	65	74	7.34	1.70	2.39	9	6	.0	0	7.3	S	30	NW	31	10	9	12	5.7	70
Roanoke	1174	974.5	1016.0	87	64	75.9	.0	94	31+	58	15+	10	0	62	66	2.06	-2.85	.43	[illegible]	5	.0	0	6.3	SE	--	---	--	3	19	[illegible]	5.7	--
WASHINGTON																																
Olympia	190	1011.2	1018.3	83	47	64.7	1.9	98	6	39	25+	8	0	51	65	T	-.72	T	0	0	.0	0	6.5	SW	*17	WSW	13+	18	9	4	3.3	--
Seattle (U)	14	------	------	79	56	67.6	2.0	93	6	50	10	2	0	--	--	T	-.52	T	0	--	.0	0	----	---	32	SW	30	--	--	--	----	78
Seattle	14	1017.3	1018.2	--	--	----	----	--	--	--	--	--	--	51	58	----	----	----	--	--	---	--	6.7	NW	--	---	--	--	--	--	----	--
Seattle-Tacoma	386	1004.7	1018.8	80	54	66.7	2.8	94	29+	46	10	3	0	51	61	T	.58	T	0	0	.0	0	8.5	N	*17	NNW	28+	19	[illegible]	[illegible]	3.1	--
Spokane	2357	946.5	1014.7	92	59	75.1	5.5	102	18	46	2	19	0	39	30	T	.36	T	0	0	.0	0	7.6	SW	25	SW	27+	23	5	3	1.9	93
Stampede Pass (R)	3958	883.2	1020.0	71	49	60.2	3.3	85	16	36	1	0	0	--	--	.19	-1.10	.17	2	1	.0	0	----	---	--	---	--	22	5	4	2.5	--
Tatoosh Island(R)	101	1022.4	1025.7	59	50	54.7	-.8	69	5	46	25+	0	0	51	89	.03	-1.96	.02	2	0	.0	0	11.3	SW	29	S	30	7	13	11	6.0	57
Walla Walla (U)	949	978.0	1013.2	95	66	80.5	4.3	110	18	53	2	23	0	—	--	T	.28	T	0	1	.0	0	4.8	Φ W	22	W	1	27	2	2	1.5	92
Yakima	1061	976.0	1014.0	94	57	75.2	3.8	105	18+	46	11	25	0	44	36	.05	-.13	.05	1	0	.0	0	7.6	NNW	*33	WNW	26	26	2	3	1.7	--
WEST INDIES																																
San Juan, P.R.(U)	47	------	------	85	76	80.7	.7	88	13+	70	19	0	0	--	--	4.21	-1.81	1.81	20	5	.0	0	----	---	--	---	--	--	--	--	----	--
San Juan, P.R.	15	1015.4	1017.1	88	74	81.1	1.0	92	29	70	19+	5	0	73	78	5.02	-1.72	1.75	20	7	.0	0	10.7	ENE	26	NE	8	0	19	12	6.8	46
Swan Island	33	1011.8	------	87	77	81.9	-.5	89	13+	72	21+	0	0	--	--	6.68	2.38	2.45	21	12	.0	0	----	---	--	---	--	1	19	11	6.7	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		∅ Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
WEST VIRGINIA																																
Charleston	950	981.2	1016.3	84	63	73.0	-2.4	92	26	53	9+	2	0	63	75	5.57	0.12	2.42	11	9	0.0	0	4.0	NNW	*25	SSW	26	3	17	11	6.6	--
Elkins	1970	------	------	--	--	----	----	--	--	--	--	--	--	60	79	----	----	----	--	--	---	--	4.1	NW	--	---	--	--	--	--	----	--
Huntington (U)	567	------	------	86	64	74.9	-2.0	93	26+	55	8	9	0	--	--	4.26	-.56	1.99	6	--	.0	0	----	---	--	---	--	--	--	--	----	--
Parkersburg (U)	615	------	------	85	62	73.1	-2.6	94	26	53	8	8	0	--	--	3.42	-.74	1.44	11	6	.0	0	4.5	---	23	NW	3	16	5	10	4.8	63
WISCONSIN																																
Green Bay	689	993.2	1015.9	79	55	66.9	-3.0	89	21	45	20	0	0	58	73	1.87	-.72	.83	8	8	.0	0	8.6	SW	30	SW	29+	11	16	4	4.5	61
La Crosse	652	991.5	1015.8	83	61	72.0	-2.0	95	22	50	31	4	0	60	65	1.38	-1.83	1.00	5	1	.0	0	7.8	SE	*25	NW	25+	14	9	8	4.4	--
Madison	857	981.4	1016.2	80	55	67.8	-5.2	91	22	48	14+	1	0	61	77	6.04	2.74	3.04	9	4	.0	0	8.0	SW	26	E	22	12	14	5	4.5	74
Milwaukee	672	991.9	1016.8	78	56	67.1	-4.2	91	22	46	15+	1	0	59	76	3.50	1.07	1.80	10	9	.0	0	8.7	WSW	30	N	13	13	14	4	4.4	77
WYOMING																																
Casper	5319	840.8	1013.7	87	55	71.4	.3	96	23+	49	6	14	0	39	37	.59	-.58	.37	6	9	.0	0	10.3	WSW	*38	W	27	12	14	5	4.6	--
Cheyenne	6131	816.8	1015.7	86	56	70.8	2.7	96	21	50	8+	13	0	42	44	.94	-1.02	.39	9	13	.0	0	11.5	WNW	37	N	17	8	18	5	5.0	69
Lander	5563	839.1	1015.1	88	58	72.9	2.5	98	20	48	4	17	0	43	37	.28	-.60	.19	4	11	.0	0	7.4	⊕ SW	49	SW	23	9	15	7	4.9	72
Sheridan	3942	886.6	1015.2	91	59	75.1	4.5	103	19	48	3	20	0	44	36	.14	-1.24	.08	3	9	.0	0	7.6	NW	44	NW	20	11	17	3	4.6	75

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

∅ Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

⊕ Wind direction to 8 compass points only.

¢ City Office Data.

† Airport Data.

‡ Peak Gust.

HEATING DEGREE DAYS

(Base 65 F.)

JULY 1960

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	0	0	0
Huntsville	0	0	
Mobile	0	0	0
Montgomery	0	0	0
ALASKA			
Anchorage	227	227	239
Annette	214	214	262
Barrow	848	848	784
Barter Island	854	854	750
Bethel	266	266	326
Cold Bay	409	409	465
Cordova	376	376	363
Fairbanks	124	124	149
Juneau	321	321	319
King Salmon	280	280	322
Kotzebue	349	349	384
McGrath	204	204	206
Nome	323	323	477
St. Paul	575	575	592
Shemya	542	542	
Yakutat	355	355	381
ARIZONA			
Flagstaff	7	7	49
Phoenix (U)	0	0	0
Phoenix	0	0	0
Prescott	0	0	0
Tucson	0	0	0
Winslow	0	0	0
Yuma	0	0	0
ARKANSAS			
Ft. Smith	0	0	0
Little Rock	0	0	0
Texarkana	0	0	0
CALIFORNIA			
Bakersfield	0	0	0
Bishop	0	0	0
Blue Canyon	3	3	36
Burbank	0	0	0
Eureka (U)	325	325	267
Fresno	0	0	0
Long Beach	0	0	
Los Angeles (U)	0	0	0
Los Angeles	4	4	31
Mt. Shasta (R)	3	3	37
Oakland	60	60	84
Point Arguello (R)	205	205	
Red Bluff	0	0	0
Sacramento (U)	0	0	0
Sacramento	0	0	0
Sandberg (R)	0	0	0
San Diego	0	0	11
San Francisco (U)	206	206	189
San Francisco	79	79	144
San Jose (U)	4	4	7
Santa Maria	90	90	98
COLORADO			
Alamosa	44	44	64
Colorado Springs	24	24	8
Denver	7	7	5
Grand Junction	0	0	0
Pueblo	2	2	0
CONNECTICUT			
Bridgeport	0	0	0
Hartford	4	4	0
Middletown	6	6	0
New Haven	0	0	0
DELAWARE			
Wilmington	0	0	0
DISTRICT OF COLUMBIA			
Washington (U)	0	0	0
Washington	0	0	0
FLORIDA			
Apalachicola (U)	0	0	0
Daytona Beach	0	0	0
Fort Myers	0	0	0
Jacksonville	0	0	0
Key West	0	0	0
Lakeland (U)	0	0	0
Miami	0	0	0
Miami Beach	0	0	0
Orlando	0	0	0
Pensacola (U)	0	0	0
Tallahassee	0	0	0
Tampa	0	0	0
West Palm Beach	0	0	0
GEORGIA			
Athens	0	0	0
Atlanta	0	0	0
Augusta	0	0	0
Columbus	0	0	0
Macon	0	0	0
Rome	0	0	0
Savannah	0	0	0
Thomasville (U)	0	0	0
IDAHO			
Boise	0	0	0
Idaho Falls 46W (R)	5	5	16
IDAHO (Cont'd.)			
Idaho Falls 42NW (R)	0	0	22
Lewiston	0	0	0
Pocatello	0	0	0
ILLINOIS			
Cairo (U)	0	0	0
Chicago (Midway)	0	0	0
Chicago (O'Hare)	2	2	
Moline	2	2	0
Peoria	2	2	0
Rockford	4	4	
Springfield	0	0	0
INDIANA			
Evansville	0	0	0
Ft. Wayne	3	3	0
Indianapolis	0	0	0
South Bend	9	9	5
IOWA			
Burlington	0	0	0
Des Moines	0	0	5
Dubuque	9	9	8
Sioux City	0	0	8
Waterloo	5	5	11
KANSAS			
Concordia (U)	0	0	0
Dodge City	0	0	0
Goodland	2	2	0
Topeka	0	0	0
Wichita	0	0	0
KENTUCKY			
Lexington	0	0	0
Louisville	0	0	0
LOUISIANA			
Alexandria	0	0	
Baton Rouge	0	0	0
Lake Charles	0	0	0
New Orleans (U)	0	0	0
New Orleans	0	0	0
Shreveport	0	0	0
MAINE			
Caribou	76	76	85
Greenville (U)	66	66	
Portland	14	14	15
MARYLAND			
Baltimore (U)	0	0	0
Baltimore	0	0	0
Frederick	0	0	0
MASSACHUSETTS			
Blue Hill Obs. (R)	6	6	
Boston	0	0	0
Nantucket	7	7	22
Pittsfield	51	51	25
Worcester	19	19	0
MICHIGAN			
Alpena	92	92	50
Detroit (City AP)	4	4	0
Detroit (M. Wayne Co.)	8	8	
Detroit (Willow Run)	3	3	0
Escanaba (U)	72	72	62
Flint	34	34	11
Grand Rapids	17	17	14
Lansing	29	29	13
Marquette (U)	92	92	69
Muskegon	26	26	26
S. Ste. Marie	124	124	109
MINNESOTA			
Duluth	65	65	56
Internat. Falls	73	73	70
Minneapolis	8	8	8
Rochester	27	27	24
St. Cloud	15	15	32
MISSISSIPPI			
Jackson	0	0	0
Meridian	0	0	0
Vicksburg (U)	0	0	0
MISSOURI			
Columbia	0	0	0
Kansas City	0	0	0
St. Joseph	0	0	0
St. Louis (RFC)	0	0	0
St. Louis	0	0	0
Springfield	0	0	0
MONTANA			
Billings	1	1	8
Butte	54	54	115
Glasgow	11	11	14
Great Falls	11	11	24
Havre (U)	5	5	20
Helena	7	7	36
Kalispell	15	15	47
Miles City	0	0	6
Missoula	8	8	22
NEBRASKA			
Grand Island	0	0	0
Lincoln (U)	0	0	0
Norfolk	0	0	0
North Platte	0	0	7
Omaha	0	0	0
Omaha N. Omaha AP	0	0	0
Scottsbluff	4	4	0
Valentine	0	0	11
NEVADA			
Elko	0	0	6
Ely	10	10	22
Las Vegas	0	0	0
Reno	5	5	27
Tonopah	0	0	0
Winnemucca	0	0	0
NEW HAMPSHIRE			
Concord	8	8	11
Mt. Washington Obs. (R)	578	578	
NEW JERSEY			
Atlantic City	0	0	0
Atlantic City (U)	0	0	0
Newark	0	0	0
Trenton (U)	0	0	0
NEW MEXICO			
Albuquerque	0	0	0
Clayton	15	15	0
Raton	20	20	17
Roswell	0	0	0
Silver City	0	0	
NEW YORK			
Albany	12	12	0
Binghamton	36	36	16
Buffalo	15	15	16
New York (U)	0	0	0
New York	0	0	0
Rochester	22	22	9
Schenectady	7	7	0
Syracuse	11	11	0
NORTH CAROLINA			
Asheville (U)	0	0	0
Cape Hatteras (R)	0	0	0
Charlotte	0	0	0
Greensboro	0	0	0
Raleigh	0	0	0
Wilmington	0	0	0
Winston-Salem	0	0	0
NORTH DAKOTA			
Bismarck	7	7	29
Devils Lake (U)	28	28	47
Fargo	23	23	25
Grand Forks	39	39	
Pembina	38	38	
Williston (U)	10	10	29
OHIO			
Akron	15	15	0
Cincinnati (U)	0	0	0
Cincinnati	0	0	0
Cincinnati Obs.	0	0	0
Cleveland	38	38	0
Columbus	1	1	0
Columbus (U)	0	0	0
Dayton	1	1	0
Mansfield	15	15	
Sandusky (U)	1	1	0
Toledo	7	7	0
Youngstown	24	24	0
OKLAHOMA			
Oklahoma City	0	0	0
Tulsa	0	0	0
OREGON			
Astoria	178	178	138
Burns (U)	7	7	10
Eugene	21	21	33
Meacham	24	24	88
Medford	0	0	0
Pendelton	0	0	0
Portland (U)	13	13	13
Portland	18	18	25
Roseburg	3	3	29
Salem	32	32	21
Sexton Summit (R)	50	50	88
PENSYLVANIA			
Allentown	0	0	0
Erie	25	25	7
Harrisburg	0	0	0
Philadelphia (U)	0	0	0
Philadelphia	0	0	0
Pittsburgh (U)	0	0	0
Pittsburgh	15	15	0
Reading (U)	0	0	0
Scranton	8	8	0
Williamsport	4	4	0
RHODE ISLAND			
Block Island	2	2	6
Providence	0	0	0
SOUTH CAROLINA			
Charleston (U)	0	0	0
Charleston	0	0	0
Columbia	0	0	0
Florence	0	0	0
Greenville	0	0	0
Spartanburg	0	0	0
SOUTH DAKOTA			
Huron	4	4	10
Pierre	1	1	
Rapid City	1	1	32
Sioux Falls	3	3	16
TENNESSEE			
Bristol	0	0	0
Chattanooga	0	0	0
Knoxville	0	0	0
Memphis (U)	0	0	0
Memphis	0	0	0
Nashville	0	0	0
Oak Ridge (U)	0	0	0
TEXAS			
Abilene	0	0	0
Amarillo	3	3	0
Austin	0	0	0
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	0	0	0
Del Rio (U)	0	0	
El Paso	0	0	0
Ft. Worth	0	0	0
Galveston (U)	0	0	0
Galveston	0	0	0
Houston (U)	0	0	0
Houston	0	0	0
Laredo	0	0	0
Lubbock	0	0	0
Midland	0	0	0
Port Arthur	0	0	0
San Angelo	0	0	0
San Antonio	0	0	0
Victoria	0	0	0
Waco	0	0	0
Wichita Falls	0	0	0
UTAH			
Milford	0	0	0
Salt Lake City	0	0	0
Wendover	0	0	
VERMONT			
Burlington	28	28	19
VIRGINIA			
Lynchburg	0	0	0
Norfolk	0	0	0
Richmond	0	0	0
Roanoke	0	0	0
WASHINGTON			
Olympia	59	59	91
Seattle (U)	28	28	49
Seattle	19	19	52
Seattle-Tacoma	41	41	75
Spokane	3	3	17
Stampede Pass (R)	186	186	251
Tatoosh Island (R)	310	310	295
Walla Walla	0	0	
Walla Walla (U)	0	0	0
Yakima	0	0	0
WEST VIRGINIA			
Charleston	0	0	0
Huntington (U)	0	0	0
Parkersburg (U)	0	0	0
WISCONSIN			
Green Bay	40	40	32
La Crosse	8	8	11
Madison	23	23	13
Milwaukee	40	40	20
WYOMING			
Casper	11	11	13
Cheyenne	17	17	33
Lander	13	13	7
Sheridan	6	6	27

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

JULY 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	† DAMAGE	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS
Alabama										0	0	5	0	1	2	3	0												
Arizona												4			2														
California										0	0	5	4																
Colorado	3	3	1	0	4	0	1	5	5	2	5	4	4	4	2	4	0									0	0	5	4
Connecticut										0	0	4	0	0	0	4	0									1	U	4	4
Florida	W2	2	0	0	M					0	0	3	0	4	4	3	0												
Georgia						0	0	0	4	0	3	5	4	0	1	4	0												
Idaho									5			4	4				4												
Illinois	1	2	0	0	5	0	0	2	4	0	0	6	5	0	1	5	0												
Indiana										2	33	6	4																
Iowa	4	3	0	0	5	0	0	6	5	0	0	5	5		1													5	4
Kansas	4	3	0	0	0	0	0	4	4	0	0	4	4	1	7	5	0												
Kentucky											1	4	3		2	4	2											5	4
Louisiana						0	0	4	C	0	0	5	0																
Maine						0	0	3	4	0	0	4	0	1	0	5	0									0	0	4	0
Maryland										0	0	4	C													0	0	4	C
Massachusetts	1	1	0	0	2					0	0	5	3	0	0	4	0									0	0	4	0
Michigan									6			6			2	5													
Minnesota	2	2	0	0	4	0	1	4	6	0	2	5	5	0	0	4	0									0	0	3	4
Mississippi	1	1	0	0	4																								
Missouri																												4	3
Montana	1	1	0	0	0	0	0	3	6	0	0	3	3													0	0	2	2
Nebraska	1	1	0	0	4	0	0	4	6	0	0	5	5	0	0	5	0												
New Hampshire										0	0	3	2	0	2	3	0									0	0	0	2
New Jersey	2	2	0	6	5																					0	0	5	0
New Mexico	2	2	0	0	4	0	0	0	5	0	0	3	0																
New York										1	7	5			1	5										1		6	
North Carolina						0	0	0	5	0	0	5	5	4	0	4	0												
North Dakota	9	5						5	6	0	0		5	0			3												
Ohio												6	4	1															
Oklahoma	3	3	0	0	4	0	0	4	4	0	13	6	4	0	2	5	0									0	2	6	5
Oregon						0	0	3	5	0	0	4	4	A2	S	6	4												
Pennsylvania					4			4	5							4										2	4	5	
Puerto Rico																										0	0	4	0
Rhode Island										0	0	4	4	0	0	3	0									0	0	3	3
South Carolina						0	0	2	0	0	0	4	0	0	0	3	0												
South Dakota	1	1	0	0	5		1	5	6			4	4			5													
Tennessee														2	1	2	0									0	0	0	5
Texas	3	2	0	0	4	0	0	3	5	0	7	5	0	5	0	5	0									0	0	5	C
Utah																										0	0	3	0
Vermont										0	0	4	0	0	0	3	0									0	0	3	0
Virginia						0	0	D	D	0	0	D	D	0	0	D	D									0	0	D	D
Washington																6	4												
Wisconsin						0	0	4	4	0	0	5	5	1	0	4	0									0	0	6	5
Wyoming	1	1	0	2	0																								

°	Includes crop damage.
C	Crop damage.
D	Occurred; estimates not available.
M	Minor.
S	Several.
U	Unknown.
W	Waterspouts which dissipated rapidly upon reaching shore.
A	Indirectly due to lightning as personnel killed in aeroplane being used to fight lightning set forest fires.
‡	Includes heavy sleet storm.
#	Freezing drizzle and freezing rain, commonly known as glaze.
ø	For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

TROPICAL STORM "BRENDA"

July 27 - 31, 1960

Compiled by George W. Cry
Marine Area Section, Office of Climatology
U. S. Weather Bureau

A broad area of low pressure, present in the northeastern Gulf of Mexico for several days in late July, began to move northeastward late on the 27th. Heavy squalls and high tides prevailed along the central west coast of Florida on the 28th and 29th as the incipient tropical cyclone moved northeastward across the peninsula from near Cedar Keys to southeastern Georgia. On the morning of the 29th, after moving offshore, the low intensified and Navy reconnaissance aircraft located an eye just off the South Carolina coast south-southwest of Myrtle Beach during the early afternoon. Tropical storm Brenda recrossed the coastline and moved rapidly over the eastern section of the Carolinas and southeastern Virginia, and by 7:00 a.m., e.s.t., on the 30th was centered over the central Delmar Peninsula moving northeastward at about 30 m.p.h. The storm center passed through the New York City metropolitan area around noon and was located in southern New Hampshire by early evening. Cool air from the west entered the circulation during the evening and the storm--now extratropical in character--passed through central Maine and turned northward over eastern Quebec during the night of the 30th and on the 31st.

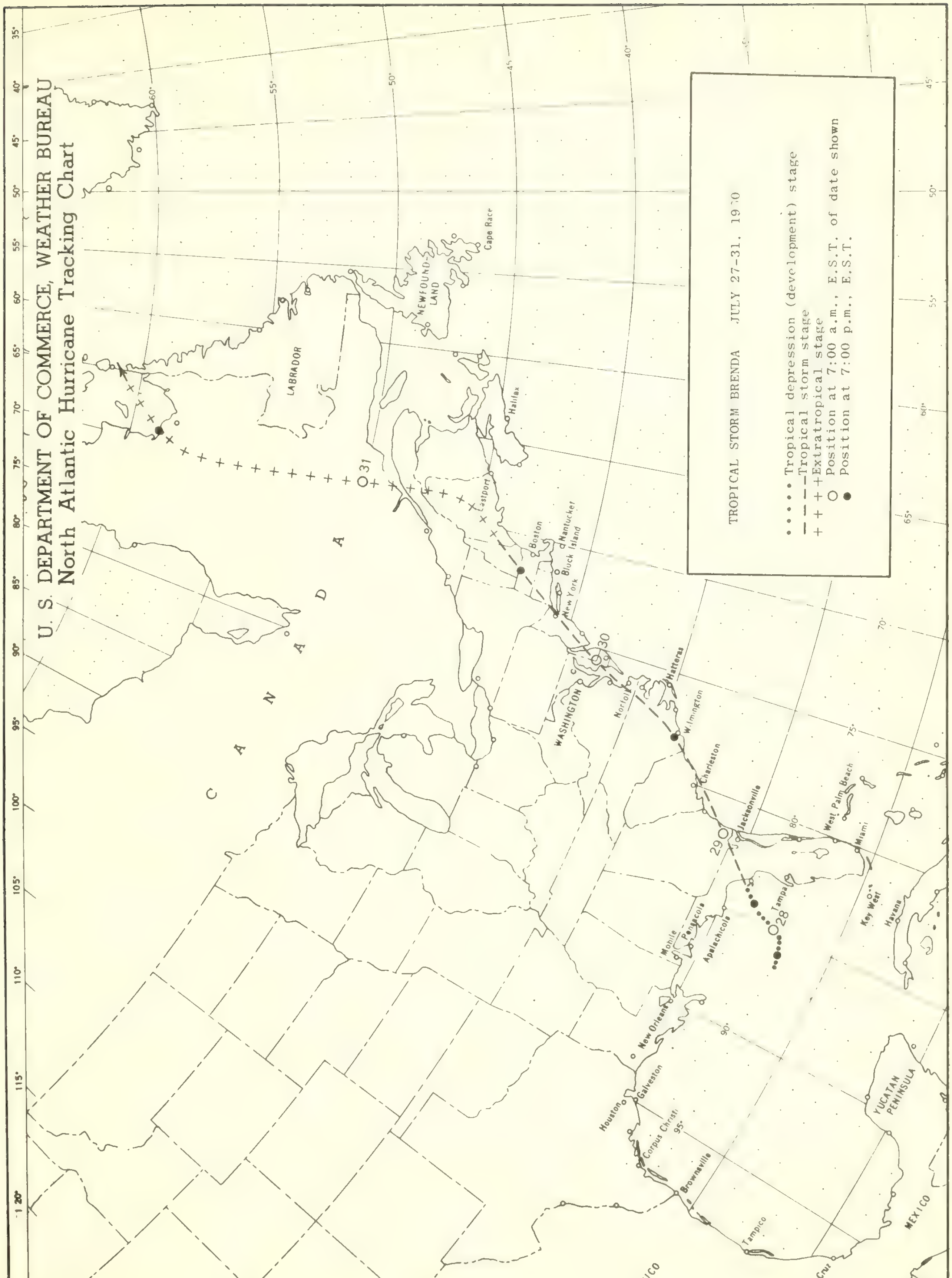
Sustained windspeeds in western Florida were near 40 m.p.h., during the night of the 28th and the morning of the 29th, with gusts up to 63 m.p.h., at Tampa. Gusts of 50 to 70 m.p.h., off the South Carolina coast and sustained winds of 58 m.p.h., at Cape Hatteras, N. C., were recorded on the 29th. Farther north maximum sustained winds of 35 to 55 m.p.h., were measured in coastal areas near the storm center, with gusts of 45 to 60 m.p.h., along portions of the middle Atlantic and southern New England coastlines. A peak gust of 65 m.p.h., was recorded on the Cape Cod Canal in eastern Massachusetts.

Wind damage in all sections was not severe, being confined principally to utility line damage from falling tree limbs and to small boat swampings. Beach erosion, due to high tides, and record-breaking flood-producing rains in west-central Florida resulted in damage estimated at slightly under $5 million. Tampa WBAS received 12.11 inches of moisture on the 28th-29th for a record 24-hour amount since records began there in 1890. Rainfall in north-central and northeast Florida and in Georgia along the storm track was light to moderate.

Rainfall, ranging from 3 to 8 inches in the coastal plains of the Carolinas, and from 3 to 6 or 7 inches in eastern Virginia, Maryland and Delaware, caused local flash flooding, but had a positive value in many areas in ending a prolonged period of serious rainfall deficiency.

A flash flood, caused by a broken dam at Woolman Lake in Burlington County, New Jersey produced an estimated $50,000 damage in the Mt. Holly area. Total rainfall at New York City (Battery) was 4.79 inches. Falling from 12:30 a.m., to 2:55 p.m., e.s.t., on the 30th, it was the largest 24-hour July amount there--exceeding 3.80 inches on July 26, 1872. Up to 7-1/2 inches of rainfall pelted portions of Long Island and 3 inches or slightly more fell as far north as the Albany area. In New England, storm totals averaged from 3-1/2 to 4 inches in portions of western Connecticut to under 1/2 inch in southeastern Rhode Island and eastern Maine. Total property damage in New England was around $175,000. Total storm damage in all sections was slightly over $5 million, principally in west-central Florida.

Three deaths have been indirectly attributed to Brenda: one in a highway accident near East Lyme, Conn., one by electrocution at Niantic, Conn., and one drowning in flood waters at Tampa, Fla., several days after the storm passage.



U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
North Atlantic Hurricane Tracking Chart

TROPICAL STORM BRENDA JULY 27-31, 1960

- • • • • Tropical depression (development) stage
- — — —Tropical storm stage
- + + +Extratropical stage
- ○ Position at 7:00 a.m., E.S.T. of date shown
- ● Position at 7:00 p.m., E.S.T.

TROPICAL CYCLONE DATA

TROPICAL STORM BRENDA

JULY 27-31, 1960

Station	Date	Pressure		Wind (miles per hour)				Rainfall (inches)	Remarks
		Low	Time*	Fastest Mile	Time*	Gusts	Time*		
FLORIDA									
Clearwater	29							13.35	Total rainfall 28th-29th.
Ft. Myers, WBAS	29	29.82	0500	35†	0625	46	0625	4.25	Southwest winds caused tides 1 to 2 feet above normal on the 28th and 29th. Shallow flooding, minor damage.
Longboat Key	29					52		10.17	Some damage.
Naples	28	29.84	Early a.m.			50	p.m. 28		Damage light (less than $10,000, 2 injured).
St. Petersburg	29							7.95	St. Petersburg pier tide 4 feet above normal 0000 29th. (Unofficial tides up to 5 feet above normal from Sarasota north to Clearwater).
Tampa, WBAS	29	29.72	0300	S 37†	2216(28)	S 63	2220(28)	13.96 total 28-29	Record 24-hour rainfall. 12.11 inches (28th-29th).
SOUTH CAROLINA									
Charleston, WBO	29	29.48	1315	S 38	1002				
Charleston, WBAS	29	29.53	1315			NW 27			
Isle of Pine	29					63-69			
Sullivan Island	29					52-55			
NORTH CAROLINA									
Hatteras	30	29.52	0125	S 58	2327(29)	S 60	2328(29)	2.30 28-30	Tides along outer Banks 1 to 2 feet above normal.
Raleigh-Durham	29	29.57	2200	N 24	1900	N 24	1900	2.60 28-30	
Wilmington	29	29.40	1845	SW 31	1958	SSE 48	1635	3.91 28-30	
VIRGINIA									
Norfolk, WBAS	30	29.38	0345	E 36	2213(29)	ESE 40	2258(29)	2.57 29-30	Storm center passed just west of Hampton Roads about 0035 July 30. Tide harbor 4.7 MLW (2 feet above normal).
MARYLAND									
Baltimore	30	29.54	0656	NE 23	0346	NNE 28	0335	2.15	Local flooding in southern Maryland.
NEW JERSEY									
Atlantic City, WBAS	30	29.35		ENE 37				2.45	Tide 3 feet above normal (at low tide).
Newark, WBAS	30	29.36		NNE 25				2.54	Storm center passed slightly to east.
Trenton, WBO	30	29.38		N 31				3.17	
NEW YORK									
New York City Battery	30	29.35		NW 36				4.79	Heaviest 24-hour July rainfall total 0030-1455 e.s.t.
Laguardia	30	29.34		NE 56				3.46	
CONNECTICUT									
Bridgeport	30	29.34		E 35†				3.57	
RHODE ISLAND									
Point Judith	30					WSW 55	1850		
Providence	30	29.32		SSE 28†		SSE 48	1214	0.72	Tide 7.1 feet MLW or 3 feet above normal.
MASSACHUSETTS									
Boston	30	29.31		W 30		W 38		1.00	
Cape Cod Canal	30					SSE 65	1745		
Nantucket	30	29.44		S 42				0.17	
NEW HAMPSHIRE									
Concord	30	29.32		E 32				1.17	
MAINE									
Portland	30	29.33		SE 35		SE 39		1.54	

* All times are Eastern Standard Time
† 1 minute maximum wind.

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

JULY 1960

The most important flooding during the month in the continental United States occurred in the west coast and central portions of Florida from heavy rain accompanying tropical storm "Brenda". Flooding was severe in the Tampa-Orlando area. Flooding reported elsewhere was mostly minor and widely scattered.

ATLANTIC SLOPE DRAINAGE

Heavy rainfall (3 to 4 inches) on the 30th in central New Jersey in connection with tropical storm "Brenda" caused minor flooding on the Millstone River at Blackwells Mills. The Assunpink River at Trenton, N. J., reached bankfull stage during the afternoon of the 30th. The Raritan River approached within 0. 3 foot of flood stage at Manville. No damages were reported.

Very heavy rains in the North Carolina Coastal Plain on the 29th caused the Neuse River and portions of the Tar River to overflow as the month ended. A complete account of this flooding will be given in next month's report.

The light flooding along the Waccamaw and the North Fork of the Edisto in South Carolina towards the end of the month was due to heavy rain associated with tropical storm "Brenda". The flooding was brief and no damage resulted.

Shallow flooding occurred along the South Carolina coast from the 6th to the 10th, at the time of high tide, during the afternoons and evenings. The highest tide was 7. 9 feet above mean low water on the 8th. Flooding begins at 7. 0 feet above mean low water. No damage was noted.

Considerable flooding occurred in the west coast and central portions of Florida during the latter part of the month from excessive rainfall accompanying tropical storm "Brenda" as it moved up the west coast and across the State in the Big Bend area. Over 12 inches of rain occurred in the Tampa-St. Petersburg area which, with above normal tides, caused widespread flooding. Flooding on the Hillsborough River reached a peak of approximately 15. 3 feet which was about 2 feet below the peak reached during the severe flooding of March 1960. This was the worst storm to hit the west-central Florida coast since the last severe hurricane in September 1950. Damage from abnormal storm tides (3 to 5 feet above normal) and the record-breaking rains which accompanied and followed the storm leading to widespread flooding in low areas and along the Hillsborough and Alafia Rivers was estimated at several million dollars. A severe local thunderstorm produced over 8 inches of rain in a 4-hour period at Orlando, Fla., on the 25th. Numerous lakes overflowed their banks, flooding homes. Many streets had to be closed to traffic.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--The light overflow on the Root River at Hokah, Minn., on the 3d and 4th was due to rainfall ranging from 1 to 3. 5 inches on the 2d. Only minor damage resulted.

Minor flooding developed on the North Skunk and the lower Skunk Rivers in Iowa on the 13th, due to rainfall averaging 1 inch with localized rains exceeding 2 inches. The flooding was brief and the streams were back within their banks by the 14th. Very little if any flood damage occurred.

Light flooding occurred on the Salt and Fox Rivers in Missouri on the 1st and 2d due to heavy rains. The Fox River overflowed again on the 13th. No damages were reported.

Heavy rain during the latter part of June and the 1st part of July caused minor flooding on the lower Illinois River and tributaries in that reach. Other flooding occurred on the main stem of the Mississippi below Clarksville and Winfield, Mo., and on the Kaskaskia and Big Muddy Rivers in southern Illinois. All streams had returned to their banks by the 11th. Considerable damage resulted to crops from the June to July floods. In some areas persistent flooding had prevented spring planting and consequently reduced the amount of damage by summer floods.

Missouri Basin.--Minor local overflows occurred on the upper Big and Little Blue Rivers during the first half of the month. The biggest rise occurred on the Big Blue River at Crete, Nebr., on the 10th from 2- to 3-inch rainfall on the 9th and 10th. Damages were negligible.

Flooding during late June and early July resulted from heavy rains ranging from around 1. 0 to 3. 5 inches over the North Grand, Chariton and in some of the smaller tributaries of the Missouri River in the central part of Missouri. Stages reached 3 to 6 feet higher than they were during the flood of early June this year. Crop damage was extensive in lowlands and both rail and highway traffic were temporarily halted in a few areas.

Ohio Basin.--The flooding in the Ohio Basin during July was a continuation of the flooding that developed from the excessive rains over Indiana and Kentucky on June 22 and 23. As the month began, the Green River was cresting at Woodbury, Ky., and the White River at Hazleton, Ind. The Wabash River was above flood stage as far upstream as Vincennes, Ind. It crested at Mt. Carmel, Ill., on the 2d, 4. 1 feet above flood stage, and at New Harmony, Ind., on the 3d, 1. 4 feet above flood stage. The East Fork of the White River was receding and was within its banks by the 2d. Thousands of acres of crops were inundated and the crop damage was heavy.

Arkansas Basin.--Minor lowland flooding occurred on Black Bear Creek in Noble and Pawnee Counties in Oklahoma from rainfall averaging 3 to 5 inches on the 4th. This same storm caused rises to about two-thirds of bankfull stage on the Cimarron River at Perkins, Okla., and on the Arkansas River at Ralston, Okla. The second major storm took place from the 22d to the 25th, causing flooding on the Cottonwood Creek and on the Illinois and Poteau Rivers between the 24th and 27th. The crest on the Illinois River at Tahlequah was nearly 10 feet above flood stage. Flash floods occurred on the 25th at Wagoner, Okla., and Fayetteville, Ark., after record-breaking rainfall amounts. One death resulted when a young man attempted to cross rain-swollen Dirty Creek on horseback.

Red Basin.--Light flooding occurred on the Sulphur River at Naples, Tex., between the 9th and 14th due to heavy rain on the 5th and 6th. The heaviest amount reported was 4. 2 inches at Boxelder, Tex. No damage resulted.

WEST GULF OF MEXICO DRAINAGE

The only flooding in the West Gulf of Mexico Drainage during July was that due to the heavy rains in connection with the tropical disturbance which moved inland from the Gulf of Mexico near Corpus Christi, Tex., early on

June 24, and the locally heavy rains on July 17. The Navidad River crested at a stage of 33. 5 feet, 12. 5 feet above flood stage on June 27 at Ganado, Tex. , and continued in flood until July 1. The Guadalupe River crested at a stage of 28. 9 feet, 7. 9 feet above flood stage at Victoria, Tex. , on June 30 and continued in flood until July 2.

JULY 1960

Rainfall amounts of 7 to 12 inches in locally heavy showers on the 17th resulted in extensive flooding on the Turkey Creek watershed in Uvalde and Zavalla Counties, Tex. Only minor damage resulted from the flooding and was limited to washing out of roads and some fences.

FLOOD STAGE DATA

(All dates in July unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From–	To–	Stage	Date
ATLANTIC SLOPE DRAINAGE	Ft.			Ft.	
Millstone: Blackwells Mill, N.J.	8	30	30	8.8	30
Assunpink: Trenton, N. J.	7	30	30	7.0	30
Waccamaw: Conway, S. C.	7	30	Aug. 2	7.5	31
North Fork Edisto: Orangeburg, S. C.	8	30	Aug. 1	8.3	31
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Root: Hokah, Minn.	47	3	4	48.6	3
North Skunk: Sigourney, Iowa	16	13	13	16.1	13
Skunk: Oskaloosa, Iowa	15	13	14	15.3	13
Fox: Wayland, Mo.	15	1 13	2 13	17.3 16.25	1 13
Salt: New London, Mo.	19	1	2	19.4	1
Sangamon: Riverton, Ill.	13	June 21	6	20.6	June 25
La Moine: Ripley, Ill.	22	1	4	23.4	1
Illinois: Havana, Ill.	14	June 23	7	15.4	1
Beardstown, Ill.	14	June 23	11	18.3	1-2
Kaskaskia: Vandalia, Ill.	18	June 25	3	22.0	June 30
Carlyle, Ill.	21	June 30	11	26.7	3
Big Muddy: Murphysboro, Ill.	16	6	9	16.8	8
Mississippi: Clarksville, Mo.	23	2	4	24.3	2
Winfield, Mo.	23		5	24.85	2
Missouri Basin					
Platte: Agency, Mo.	20	1	3	21.8	2
Little Blue: Deweese, Nebr.	6	6	6	6.9	6
Turkey Creek: Wilber, Nebr.	12	14	14	12.5	14
Big Blue: Crete, Nebr.	16	10	10	18.7	10
Crooked: Richmond, Mo.	18	1	2	23.6	1
Wakenda Creek: Carrollton, Mo.	15	1	2	22.5	2
Grand: Pattonsburg, Mo.	25	June 30	2	29.5	1
Gallatin, Mo.	21	1	2	24.1	2
Chillicothe, Mo.	24	June 30	4	30.45	2
Sumner, Mo.	26	June 30	7	33.9	3
Brunswick, Mo.	12		8	17.8	5
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Missouri Basin (Cont'd.)					
Chariton: Novinger, Mo.	20	1	2	24.0	1
Prairie Hill, Mo.	15	1		19.3	2
Moniteau Creek: Fayette, Mo.	16	1	1	18.4	1
Ohio Basin					
Green: Lock 4, Woodbury, Ky.	33	June 29	2	35.0	1
East Fork: Bedford, Ind.	20	June 27	2	26.7	June 28
Williams, Ind.	10	June 27	1	15.1	June 28
White: Petersburg, Ind.	16	June 26	6	22.5	June 30
Hazleton, Ind.	16	June 27	7	22.9	1
Wabash: Vincennes, Ind.	16	June 28	1	17.0	June 30
Mt. Carmel, Ill.	17	June 28	6	21.1	2
New Harmony, Ind.	15	June 30	5	16.4	3
Skillet Fork: Wayne City, Ill.	15	2	4	15.8	3
Arkansas Basin					
Cottonwood Creek: Guthrie, Okla.	22	24	24	22.75	24
Illinois: Tahlequah, Okla.	11	26	27	20.7	26
Poteau: Poteau, Okla.	24	24	24	24.3	24
Red Basin					
Sulphur: Naples, Tex.	22	9	14	25.3	11
WEST GULF OF MEXICO DRAINAGE					
Guadalupe: Victoria, Tex.	21	June 26	2	28.9	June 30
Navidad: Ganado, Tex.	21	June 25	1	33.5	June 27

* Tentative

RAWINSONDE DATA

Average monthly values

JULY 1960

	ALBANY, N. Y. (1005 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	86	17.5	86	212	2.9
1,000	31	128	17.3	83	234	3.1
950	31	563	16.6	71	283	7.8
900	31	1,026	14.2	70	289	10.1
850	31	1,507	11.3	67	285	12.6
800	31	2,011	8.5	62	290	13.6
750	31	2,541	6.1	52	287	15.9
700	31	3,105	3.1	51	286	19.0
650	31	3,700	.4	45	279	21.6
600	31	4,342	- 2.9	38	277	24.3
550	31	5,019	- 6.7	35	273	25.8
500	31	5,765	-11.3		273	26.6
450	31	6,559	-16.6		272	29.0
400	31	7,440	-23.1		277	29.7
350	31	8,406	-29.9		276	35.8
300	31	9,487	-37.9		274	38.1
250	31	10,720	-46.7		276	42.9
200	31	12,175	-53.2		273	44.3
175	31	13,033	-54.3		277	46.4
150	31	14,019	-55.6		279	39.8
125	31	15,177	-57.1		275	36.5
100	31	16,587	-57.3		278	31.7
80	31	18,002	-56.0		272	14.6
60	31	19,846	-52.7		128	5.8
50	30	21,030	-51.0		105	8.9
40	29	22,487	-49.3		102	13.0
30	28	24,382	-47.3		91	19.2
25	25	25,594	-45.6		93	21.6
20	23	27,082	-43.3		93	22.9
15	12	29,018	-39.8			
10						

	ALBUQUERQUE, N. MEX. (842 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,619	20.0	56	71	2.9
1,000	31	102				
950	31	551				
900	31	1,027				
850	31	1,533				
800	31	2,058	18.4	54	148	3.3
750	31	2,600	15.1	53	237	1.0
700	31	3,190	11.2	55	355	2.5
650	31	3,796	6.7	57	19	4.1
600	31	4,458	2.0	60	37	6.2
550	31	5,143	- 3.3	62	43	7.6
500	31	5,901	- 8.7	59	53	4.9
450	31	6,707	-13.6	54	38	3.1
400	31	7,599	-19.5	45	302	1.9
350	31	8,578	-26.3	37	301	4.1
300	31	9,677	-34.0		270	6.0
250	31	10,930	-43.5		264	9.9
200	31	12,396	-54.3		251	15.0
175	31	13,242	-59.7		262	17.3
150	31	14,194	-64.8		278	13.4
125	31	15,297	-68.4		297	5.8
100	31	16,631	-68.8		79	2.1
80	31	17,976	-65.4		83	11.7
60	31	19,748	-59.6		90	18.7
50	31	20,898	-55.7		90	21.4
40	29	22,329	-53.3		91	21.4
30	28	24,193	-50.3		84	23.7
25	27	25,385	-48.5		84	27.2
20	25	26,858	-46.0		87	28.0
15	22	28,788	-42.5		88	31.9
10						

	AMARILLO, TEX. (895 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,095	19.0	82	177	2.1
1,000	31	125				
950	31	571				
900	31	1,040				
850	31	1,538	20.1	63	217	6.8
800	31	2,060	17.5	58	225	6.0
750	31	2,601	14.0	57	266	2.7
700	31	3,188	10.1	56	327	2.5
650	31	3,795	6.0	54	311	2.3
600	31	4,453	1.7	51	321	2.3
550	31	5,144	- 2.5	47	323	4.7
500	31	5,901	- 7.1	44	308	5.2
450	31	6,708	-12.2	39	315	6.0
400	31	7,608	-18.0	32	302	6.0
350	31	8,593	-25.0		298	8.5
300	31	9,695	-33.3		294	11.3
250	31	10,950	-42.9		280	13.8
200	31	12,419	-53.6		277	17.7
175	31	13,268	-59.2		275	18.1
150	31	14,222	-64.2		288	13.8
125	31	15,328	-67.4		308	6.2
100	30	16,667	-68.0		50	4.3
80	29	18,018	-64.8		74	11.7
60	29	19,799	-58.5		90	17.5
50	29	20,952	-55.4		88	18.7
40	27	22,385	-52.4		87	22.7
30	23	24,255	-49.6		88	24.5
25	20	25,462	-47.4		85	26.2
20	18	26,952	-45.3		89	29.1
15	9	28,895	-41.5			
10						

	ANCHORAGE, ALASKA (1011 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	30	12.0	81	175	2.9
1,000	31	125	12.1	78	180	4.1
950	31	551	10.2	72	167	6.8
900	31	1,002	7.6	73	158	6.8
850	31	1,471	4.7	76	148	6.4
800	31	1,963	1.7	78	144	6.2
750	31	2,477	- 1.3	78	144	5.4
700	31	3,029	- 4.5	78	138	3.3
650	31	3,604	- 7.9	75	124	2.9
600	31	4,228	-11.5	69	98	2.3
550	31	4,885	-15.6	62	122	2.5
500	31	5,604	-20.2	55	103	2.9
450	31	6,369	-25.4	51	107	1.4
400	31	7,223	-31.5	49	90	1.6
350	31	8,156	-38.4		30	1.6
300	31	9,199	-45.4		322	5.8
250	31	10,400	-50.0		338	5.2
200	31	11,859	-48.5		330	6.6
175	31	12,743	-47.0		333	5.6
150	31	13,764	-47.1		340	4.1
125	31	14,971	-47.1		322	3.5
100	31	16,449	-47.1		42	.8
80	31	17,927	-46.8		77	2.1
60	31	19,834	-46.6		80	5.8
50	31	21,044	-46.4		80	8.0
40	31	22,527	-46.0		85	8.7
30	28	24,442	-44.6		87	12.8
25	25	25,673	-42.9		84	15.5
20	23	27,187	-40.5		83	18.5
15	19	29,163	-37.9		84	21.2
10	5	31,993	-31.5			

	ANNETTE, ALASKA (1016 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	37	12.2	87	160	0.8
1,000	31	170	11.7	86	169	1.7
950	31	598	9.4	85	170	6.0
900	31	1,046	7.1	85	174	7.0
850	31	1,515	4.5	83	186	8.7
800	31	2,007	2.3	79	198	10.1
750	31	2,523	- .4	73	202	10.1
700	31	3,077	- 3.3	67	206	11.3
650	31	3,654	- 6.7	61	210	13.6
600	31	4,282	-10.1	53	211	15.5
550	31	4,941	-14.2	48	213	16.9
500	31	5,665	-18.7	45	215	19.2
450	31	6,434	-24.1	46	217	19.6
400	31	7,293	-30.3	45	219	22.2
350	31	8,230	-37.4		214	24.7
300	31	9,278	-44.5		219	24.9
250	31	10,483	-50.2		225	30.7
200	31	11,934	-51.1		227	25.5
175	31	12,806	-49.5		227	22.2
150	31	13,815	-49.6		227	20.4
125	31	15,008	-49.8		227	16.3
100	31	16,466	-50.0		220	12.2
80	31	17,924	-50.3		199	8.0
60	30	19,803	-49.8		147	3.1
50	29	20,995	-49.4		101	4.7
40	25	22,462	-48.7		90	8.4
30	23	24,359	-47.1		86	11.3
25	21	25,577	-45.1		82	15.0
20	16	27,080	-42.5		86	18.7
15	8	29,017	-38.8			
10						

	ATHENS, GA. (988 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	246	21.6	92	33	1.4
1,000	31	140				
950	31	584	22.3	76	288	.8
900	31	1,057	20.1	69	250	2.7
850	31	1,549	17.0	70	254	2.9
800	31	2,064	13.5	70	272	4.7
750	31	2,599	10.2	66	271	5.6
700	31	3,176	7.1	57	280	7.8
650	31	3,778	3.9	51	276	8.2
600	31	4,430	.6	49	274	12.0
550	31	5,116	- 3.2	46	271	12.0
500	31	5,872	- 7.6	43	278	11.9
450	31	6,677	-12.2	40	277	13.6
400	31	7,576	-17.8	32	286	15.0
350	30	8,562	-24.5	29	282	16.5
300	30	9,668	-32.6		288	20.2
250	30	10,926	-42.3		286	23.1
200	30	12,398	-53.7		286	24.7
175	30	13,245	-59.8		290	24.9
150	30	14,196	-64.9		292	18.8
125	29	15,295	-68.6		301	13.6
100	29	16,631	-68.5		342	5.1
80	29	17,979	-65.2		61	7.6
60	28	19,762	-58.2		80	19.8
50	25	20,920	-54.9		89	23.3
40	24	22,356	-51.9		92	26.0
30	22	24,237	-49.2		87	28.8
25	21	25,435	-47.5		86	31.5
20	18	26,923	-45.9		83	33.0
15	9	28,838	-44.9			
10						
7						
5						

	BARROW, ALASKA (1015 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	8	1.3	93	38	1.7
1,000	31	132	2.4	85	71	2.7
950	31	548	4.5	76	38	1.4
900	31	988	4.0	69	316	2.5
850	31	1,452	2.7	60	311	3.9
800	31	1,941	.8	60	300	4.7
750	31	2,454	- 1.7	54	296	5.4
700	31	3,004	- 4.7	54	297	5.6
650	31	3,580	- 7.9	49	299	7.0
600	31	4,203	-11.6	46	303	8.2
550	31	4,862	-15.9	41	300	9.1
500	31	5,576	-20.8	40	306	10.1
450	31	6,341	-26.7	38	307	10.3
400	31	7,187	-32.8	36	313	10.9
350	31	8,115	-39.1		314	11.5
300	31	9,158	-45.2		327	14.8
250	31	10,365	-48.8		323	18.1
200	31	11,836	-46.4		319	14.6
175	31	12,725	-45.4		318	11.7
150	31	13,754	-45.3		324	9.1
125	31	14,971	-45.2		329	7.2
100	31	16,462	-44.9		360	4.7
80	31	17,956	-44.2		27	5.1
60	30	19,886	-43.6		47	6.0
50	29	21,114	-43.0		54	7.6
40	29	22,619	-42.6		71	9.3
30	29	24,564	-41.6		78	10.1
25	28	25,804	-40.1		76	11.3
20	24	27,333	-38.0		74	13.2
15	19	29,339	-34.7		79	17.1
10	6	32,224	-29.0			
7						
5						

	BARTER IS., ALASKA (1014 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	15	1.5	94	67	2.1
1,000	31	126	3.3	90	94	1.7
950	31	544	6.8	75	323	2.5
900	31	989	6.0	65	298	4.1
850	31	1,456	4.3	63	267	7.6
800	31	1,947	1.9	61	278	9.7
750	31	2,457	- 1.0	58	275	8.5
700	31	3,012	- 4.4	56	294	11.3
650	31	3,581	- 7.7	51	295	13.0
600	31	4,211	-11.4	47	300	12.8
550	31	4,864	-15.6	42	301	12.4
500	31	5,585	-20.7	39	292	12.6
450	31	6,344	-26.4	37	280	14.4
400	31	7,195	-32.8	35	291	14.8
350	31	8,122	-39.5		300	16.1
300	31	9,162	-46.6		303	15.0
250	31	10,358	-49.7		301	15.0
200	31	11,831	-45.8		304	13.8
175	31	12,723	-44.6		307	11.9
150	31	13,755	-44.4		315	9.1
125	31	14,976	-44.4		309	8.0
100	31	16,471	-44.1		319	6.6
80	31	17,970	-43.3		336	4.1
60	30	19,910	-42.5		45	5.6
50	30	21,142	-42.2		56	7.4
40	30	22,652	-42.0		79	7.8
30	29	24,604	-40.8		84	9.1
25	28	25,849	-39.5		88	10.3
20	27	27,377	-37.8		78	13.6
15	26	29,371	-34.9		82	13.6
10	25	32,224	-30.5		79	17.5
7	15	34,750	-28.6			
5	5	37,205	-28.0			

	BETHEL, ALASKA (1008 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	11.1	92	266	3.1
1,000	31	106	12.0	88	278	3.1
950	31	534	11.1	76	199	3.5
900	31	986	8.6	74	183	5.1
850	31	1,457	6.0	69	182	5.1
800	31	1,951	3.3	62	175	4.5
750	31	2,473	.7	62	174	3.1
700	31	3,025	- 2.2	64	231	1.2
650	31	3,605	- 5.3	61	360	1.6
600	31	4,236	- 8.7	53	18	2.7
550	31	4,899	-12.7	47	350	4.1
500	31	5,628	-17.1	41	332	5.1
450	31	6,401	-22.5	43	337	9.3
400	31	7,267	-28.8	40	329	10.1
350	31	8,209	-35.9		327	11.1
300	31	9,263	-43.5		333	14.6
250	31	10,471	-49.7		320	13.8
200	31	11,923	-51.0		345	8.7
175	31	12,795	-49.2		332	6.2
150	31	13,808	-48.9		298	3.7
125	31	15,005	-49.0		343	4.3
100	31	16,471	-48.5		357	3.3
80	31	17,943	-47.8		97	3.3
60	30	19,846	-47.3		74	7.0
50	30	21,054	-47.1		82	7.0
40	29	22,532	-46.8		76	10.1
30	29	24,444	-46.1		88	13.0
25	25	25,664	-45.2		87	13.2
20	16	27,158	-43.5		81	15.3
15						
10						
7						
5						

	BISMARCK, N. DAK. (956 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	505	16.1	69	124	2.9
1,000	31	121				
950	31	565	16.8	65	132	2.9
900	31	1,027	20.4	44	205	7.2
850	31	1,519	17.9	39	259	4.9
800	31	2,034	14.4	40	300	6.6
750	31	2,570	10.3	43	306	8.7
700	31	3,146	6.3	39	302	13.0
650	31	3,745	2.5	36	297	16.9
600	31	4,393	- 1.7	33	300	21.2
550	31	5,073	- 6.2		299	22.0
500	31	5,820	-11.1		296	23.5
450	31	6,614	-16.8		295	26.0
400	31	7,496	-23.3		295	29.9
350	31	8,460	-30.6		295	32.4
300	31	9,537	-38.8		294	38.1
250	31	10,766	-47.2		293	43.7
200	31	12,219	-53.7		290	46.6
175	31	13,075	-55.1		290	48.4
150	31	14,056	-56.6		290	41.6
125	31	15,208	-58.2		292	32.3
100	31	16,610	-58.8		304	22.0
80	31	18,015	-57.5		329	6.8
60	31	19,844	-54.7		52	5.1
50	31	21,016	-52.4		73	7.2
40	31	22,467	-50.1		83	10.9
30	28	24,355	-47.8		85	13.6
25	26	25,566	-46.0		81	15.2
20	23	27,061	-43.3		80	14.2
15	17	29,014	-39.8		88	17.5
10	6	31,809	-35.8			
7						
5						

	BOISE, IDAHO (916 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	868	19.0	40	164	2.5
1,000	31	98				
950	31	549				
900	31	1,019	22.3	32	145	1.2
850	31	1,517	23.3	25	257	.6
800	31	2,043	20.2	24	237	1.0
750	31	2,594	16.0	26	251	3.3
700	31	3,177	11.1	31	240	5.1
650	31	3,786	6.1	36	227	8.2
600	31	4,441	.6	40	233	11.7
550	31	5,127	- 4.9	45	231	14.6
500	31	5,877	-10.5	44	234	17.1
450	31	6,676	-16.2		239	17.9
400	31	7,559	-22.6		236	21.4
350	31	8,526	-29.8		234	21.4
300	31	9,605	-37.9		235	26.2
250	31	10,839	-46.1		238	29.3
200	31	12,296	-53.8		240	31.3
175	31	13,150	-56.3		243	33.0
150	31	14,123	-59.1		246	28.4
125	31	15,261	-61.6		250	19.0
100	31	16,640	-62.6		247	8.5
80	31	18,023	-60.5		181	2.1
60	31	19,831	-56.4		95	6.6
50	30	20,995	-54.0		89	11.1
40	30	22,436	-51.5		85	14.8
30	28	24,314	-48.9		85	16.1
25	25	25,516	-47.2		88	19.2
20	22	27,002	-44.7		84	23.5
15	16	28,935	-41.5		85	24.3
10	8	31,727	-34.8			

	BROWNSVILLE, TEX. (1014 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	7	24.7	93	163	3.5
1,000	29	129	25.7	86	160	8.4
950	29	578	23.6	80	167	16.3
900	29	1,053	21.1	72	167	17.3
850	29	1,547	18.8	61	157	14.6
800	29	2,065	15.8	55	145	11.9
750	29	2,606	12.8	53	137	9.9
700	29	3,188	9.4	50	122	8.4
650	29	3,790	5.6	49	109	8.4
600	29	4,450	1.6	47	112	9.5
550	28	5,138	- 2.6	43	93	8.7
500	28	5,898	- 6.9	37	87	8.7
450	28	6,717	-12.0	33	80	7.4
400	28	7,607	-17.8	34	91	8.2
350	28	8,591	-24.9		78	7.0
300	28	9,695	-33.0		64	7.6
250	28	10,953	-42.6		63	5.6
200	28	12,424	-54.0		72	7.6
175	27	13,268	-60.0		86	9.5
150	27	14,218	-65.8		82	9.1
125	25	15,314	-70.9		76	10.7
100	24	16,628	-72.8		74	17.1
80	23	17,951	-68.5		90	21.8
60	21	19,703	-61.8		79	27.8
50	21	20,840	-58.8		85	36.3
40	21	22,255	-55.0		95	42.0
30	19	24,116	-50.6		88	42.7
25	19	25,309	-49.0		87	44.7
20	18	26,786	-46.2		87	52.5
15	15	28,701	-43.7		88	55.0
10	6	31,438	-39.5			

	BUFFALO, N. Y. (994 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	182	17.0	81	244	4.1
1,000	31	126				
950	31	564	17.0	68	276	8.9
900	31	1,024	14.4	65	293	11.3
850	31	1,505	11.3	67	286	14.4
800	31	2,009	8.5	59	280	16.1
750	31	2,539	6.0	51	282	17.9
700	30	3,101	3.0	45	282	19.4
650	30	3,697	.2	35	286	20.8
600	30	4,335	- 3.0	32	285	23.1
550	30	5,016	- 6.9		284	24.9
500	30	5,756	-11.8		283	27.2
450	30	6,548	-17.1		282	29.3
400	30	7,427	-23.5		283	32.8
350	30	8,390	-30.5		278	36.1
300	30	9,468	-38.6		276	39.2
250	30	10,698	-47.2		275	43.1
200	30	12,151	-53.7		276	45.9
175	30	13,007	-55.0		278	41.2
150	30	13,991	-55.7		281	35.6
125	29	15,151	-57.4		279	27.0
100	28	16,561	-58.2		277	19.0
80	28	17,969	-57.2		287	8.5
60	25	19,803	-53.3		41	5.6
50	22	20,982	-51.2		80	8.9
40	21	22,434	-49.3		93	13.0
30	16	24,325	-47.8		85	15.0
25	12	25,536	-45.9			
20	10	27,035	-43.6			
15						
10						

	BURRWOOD, LA. (1014 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	3	27.5	83	277	3.3
1,000	31	130	27.0	81	279	4.3
950	31	585	24.3	77	269	4.9
900	31	1,056	21.4	74	256	4.5
850	31	1,551	18.3	72	261	1.9
800	31	2,068	15.1	70		.0
750	31	2,607	12.0	64	58	1.0
700	31	3,188	8.8	60	348	1.4
650	31	3,795	5.2	55	336	3.1
600	31	4,447	1.6	49	343	3.9
550	31	5,140	- 2.2	43	356	4.5
500	31	5,895	- 6.6	40	2	4.7
450	31	6,706	-11.6	37	20	5.2
400	31	7,604	-17.2	34	32	4.7
350	31	8,592	-23.8	29	39	5.4
300	30	9,702	-31.9		67	4.5
250	30	10,964	-41.9		84	5.2
200	30	12,440	-53.2		92	5.6
175	30	13,288	-59.5		91	5.8
150	30	14,239	-65.6		73	5.1
125	30	15,334	-70.4		42	10.5
100	30	16,652	-71.4		75	14.0
80	30	17,983	-67.2		87	18.1
60	30	19,748	-60.1		82	26.0
50	30	20,893	-57.0		87	31.9
40	30	22,317	-53.3		94	34.8
30	28	24,183	-49.6		91	35.8
25	28	25,379	-48.2		85	36.5
20	28	26,855	-45.8		84	41.8
15	25	28,783	-42.8		84	44.9
10	15	31,551	-37.7			

	CAPE HATTERAS, N. C. (1015 MB.)					
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	23.8	87	269	0.8
1,000	31	131	23.9	82	265	1.2
950	31	577	21.4	78	300	3.3
900	31	1,047	18.6	75	286	4.5
850	31	1,536	15.9	70	279	6.6
800	31	2,050	13.0	67	265	9.5
750	31	2,586	10.5	62	268	11.9
700	31	3,163	7.6	56	262	14.4
650	31	3,766	4.4	53	265	16.7
600	31	4,419	1.2	42	263	17.5
550	31	5,105	- 2.6		266	18.7
500	31	5,865	- 6.8		261	18.8
450	31	6,674	-11.9		262	21.2
400	31	7,574	-17.6		263	22.3
350	30	8,560	-24.3	33	264	25.1
300	30	9,665	-32.5		271	29.0
250	30	10,925	-42.2		272	30.1
200	30	12,397	-53.5		280	34.4
175	30	13,246	-58.9		279	30.5
150	30	14,201	-63.8		286	27.4
125	29	15,314	-65.6		286	18.8
100	29	16,670	-66.0		300	8.4
80	29	18,035	-62.6		34	4.7
60	29	19,830	-57.7		86	13.6
50	28	20,990	-54.3		89	19.6
40	28	22,433	-50.9		89	22.5
30	22	24,316	-48.1		91	22.9
25	22	25,523	-46.8		89	23.9
20	17	27,015	-44.7		88	24.5
15	10	28,959	-41.6			
10						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	CARIBOU, ME. (989 MB.)						CHARLESTON, S. C. (1015 MB.)						COLD BAY, ALASKA (1013 MB.)						COLUMBIA, MO. (988 MB.)						DAYTON, OHIO (982 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	191	15.0	87	239	3.7	31	13	23.6	97	24	0.8	30	27	8.9	93	205	2.9	31	238	18.6	92	96	1.7	31	297	17.0	81	3	1.2
1,000--	31	97					31	140	24.0	89		.0	30	133	8.7	88	200	3.7	31	129					31	142				
950----	31	532	14.5	71	273	8.0	31	587	22.6	78	260	3.3	30	558	7.7	76	199	2.7	31	572	21.1	73	185	2.9	31	585	19.2	67	6	2.5
900----	31	989	12.0	66	282	10.7	31	1,061	20.1	74	257	3.7	30	1,003	7.0	69	295	3.1	31	1,041	18.6	69	266	1.9	31	1,047	16.5	65	296	4.3
850----	31	1,466	8.8	67	278	13.6	31	1,553	17.0	74	247	4.7	30	1,471	5.3	64	277	3.5	31	1,529	15.4	68	286	3.3	31	1,532	13.3	67	289	7.6
800----	31	1,965	5.7	65	278	16.7	31	2,069	13.8	73	240	5.1	30	1,965	3.4	62	284	5.4	31	2,041	12.6	60	285	5.4	31	2,040	10.5	60	289	10.3
750----	31	2,494	3.3	57	270	19.4	31	2,605	10.8	70	248	6.2	30	2,484	1.2	58	291	7.6	31	2,576	10.5	47	299	6.8	31	2,573	8.5	49	290	13.4
700----	31	3,050	.6	49	268	20.8	31	3,185	7.7	65	256	7.6	30	3,040	- 1.7	56	294	7.6	31	3,153	7.4	46	300	7.8	31	3,144	5.3	44	287	15.7
650----	31	3,638	- 2.1	42	267	22.7	31	3,790	4.6	62	260	9.7	30	3,621	- 4.6	54	291	8.5	31	3,754	4.0	42	301	8.4	31	3,743	2.3	39	285	16.7
600----	31	4,275	- 5.4	40	265	26.2	31	4,442	1.0	57	255	11.1	30	4,253	- 8.1	52	295	8.7	31	4,408	.6	39	299	9.7	31	4,389	- .9	35	283	18.1
550----	31	4,948	- 9.3	38	266	28.0	31	5,132	- 2.6	52	265	9.3	30	4,915	-12.2	48	292	11.7	31	5,092	- 3.5		302	10.7	31	5,074	- 5.0		287	20.6
500----	31	5,685	-14.2	37	266	30.9	31	5,888	- 6.9	46	270	9.3	30	5,648	-16.6	43	296	11.5	31	5,849	- 8.1	39	301	13.6	31	5,823	- 9.6		288	23.1
450----	31	6,472	-19.5	36	263	34.4	31	6,698	-11.7	40	269	10.1	30	6,423	-21.7	40	306	15.3	31	6,650	-13.3		301	16.5	31	6,626	-15.0		288	26.4
400----	31	7,342	-25.8	37	261	36.3	31	7,599	-17.5	36	268	10.7	30	7,291	-27.9	35	312	17.1	31	7,547	-19.4		301	20.4	31	7,510	-21.4		285	27.4
350----	31	8,296	-32.7		262	40.2	31	8,586	-24.2	36	276	11.7	30	8,236	-34.9		311	20.8	31	8,525	-26.4		296	24.9	31	8,482	-28.0		280	30.7
300----	31	9,364	-40.4		262	42.4	30	9,693	-32.4	33	283	12.8	30	9,295	-42.8		309	21.2	31	9,622	-34.3		289	33.0	31	9,572	-35.9		278	35.2
250----	31	10,586	-48.0		262	47.6	30	10,954	-42.3		285	14.4	29	10,502	-50.2		316	23.7	31	10,873	-43.4		290	39.4	31	10,815	-44.7		277	39.8
200----	31	12,042	-52.0		267	50.7	30	12,424	-54.3		294	19.2	29	11,945	-53.7		321	24.7	31	12,342	-53.0		286	46.6	31	12,279	-53.4		281	50.1
175----	31	12,906	-52.3		264	41.6	30	13,268	-60.6		300	21.4	29	12,805	-53.1		322	20.8	31	13,193	-58.0		283	43.7	31	13,131	-57.1		283	50.3
150----	31	13,905	-52.0		260	36.3	30	14,216	-65.7		306	17.3	27	13,805	-51.8		320	16.1	31	14,155	-62.0		287	35.9	31	14,100	-59.5		285	43.5
125----	31	15,084	-53.1		263	29.0	30	15,314	-68.9		317	10.7	25	14,981	-51.2		318	11.9	31	15,276	-64.5		296	24.3	31	15,235	-61.9		290	29.3
100----	31	16,522	-53.1		266	18.1	30	16,649	-68.0		351	4.1	24	16,432	-50.9		316	6.8	31	16,639	-64.5		309	12.4	31	16,611	-62.7		296	16.1
80-----	31	17,962	-52.4		258	10.3	30	18,000	-65.1		55	8.9	24	17,889	-49.9		29	2.3	31	18,008	-62.5		5	7.2	29	17,996	-60.6		340	7.2
60-----	29	19,829	-50.4		168	.6	30	19,779	-58.7		86	21.4	24	19,774	-49.3		80	6.0	30	19,806	-57.2		74	13.0	28	19,806	-55.9		64	8.0
50-----	29	21,023	-48.7		116	4.5	30	20,936	-54.9		94	25.3	24	20,971	-48.9		97	8.9	30	20,968	-54.0		84	16.1	28	20,974	-53.3		83	12.8
40-----	26	22,492	-48.0		96	9.9	29	22,375	-51.8		94	27.0	22	22,443	-48.6		85	10.9	29	22,413	-51.4		91	18.5	28	22,419	-50.9		90	16.5
30-----	23	24,397	-46.0		91	14.4	28	24,252	-48.9		90	28.0	22	24,340	-47.5		91	13.6	29	24,292	-49.0		90	20.8	26	24,303	-48.3		87	17.7
25-----	20	25,611	-44.5		89	16.7	27	25,460	-47.3		88	29.1	22	25,550	-45.9		87	13.4	28	25,492	-47.9		88	20.4	23	25,509	-46.8		87	20.0
20-----	18	27,113	-42.5		84	22.0	24	26,948	-44.9		86	30.1	20	27,042	-43.8		87	19.2	27	26,970	-45.2		85	23.1	20	27,002	-44.9		85	22.3
15-----	13	29,074	-39.0				18	28,881	-41.8		86	35.2	17	28,985	-40.1		85	22.0	23	28,904	-41.7		85	27.2	14	28,944	-41.6		86	29.9
10-----							8	31,674	-36.1				12	31,769	-35.0		81	31.3	18	31,703	-36.5		90	35.4	7	31,711	-37.4			
7------																			5	34,913	-31.8									

Standard pressure surface (mb.)	DENVER, COLO. (842 MB.)						DODGE CITY, KANS. (927 MB.)						EL PASO, TEX. (883 MB.)						ELY, NEV. (813 MB.)						FAIRBANKS, ALASKA (997 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,611	14.8	67	211	3.7	31	792	18.8	81	143	2.5	31	1,197	22.8	57	71	1.2	31	1,908	10.5	42	183	7.2	31	135	12.5	85	359	0.8
1,000--	31	126					31	136					31	97					31	133					31	105				
950----	31	571					31	582					31	550					31	573					31	536	13.2	65	249	8.9
900----	31	1,041					31	1,049	20.5	66	183	6.4	31	1,032					31	1,037					31	990	10.7	64	249	7.2
850----	31	1,531					31	1,543	19.5	57	220	5.6	31	1,532	22.4	53	106	1.7	31	1,531					31	1,465	7.4	67	246	6.0
800----	31	2,052	18.9	45	279	2.7	31	2,062	16.5	52	267	2.3	31	2,057	19.4	53	137	4.1	31	2,043	17.5	34	184	6.2	31	1,961	3.8	72	244	5.6
750----	31	2,601	16.6	41	319	3.1	31	2,604	13.0	51	316	3.1	31	2,602	15.6	56	102	3.5	31	2,591	17.3	27	182	3.3	31	2,476	- .1	75	233	5.8
700----	31	3,188	12.5	42	295	3.5	31	3,186	9.3	49	338	5.8	31	3,192	11.3	59	76	3.7	31	3,180	13.3	29	198	5.6	31	3,031	- 3.6	68	240	4.9
650----	31	3,800	7.6	45	312	5.6	31	3,791	5.2	51	334	8.5	31	3,801	7.0	59	65	6.2	31	3,790	8.2	35	219	6.4	31	3,607	- 7.3	63	250	4.7
600----	31	4,459	2.3	48	318	8.9	31	4,445	1.1	47	334	7.2	31	4,460	2.3	61	61	5.6	31	4,453	2.5	42	202	8.9	31	4,232	-11.0	53	233	3.7
550----	31	5,149	- 3.2	50	320	11.9	31	5,132	- 3.2	41	334	8.7	31	5,152	- 2.5	61	56	6.2	31	5,139	- 3.6	50	199	10.3	31	4,886	-15.2	48	230	3.7
500----	31	5,902	- 8.6	49	309	11.9	31	5,889	- 7.9	40	323	9.3	31	5,909	- 7.3	61	73	6.8	31	5,895	- 9.4	47	210	12.6	31	5,609	-20.2	48	237	4.5
450----	31	6,707	-14.1	44	303	12.8	31	6,694	-13.1		316	11.1	31	6,719	-12.0	53	102	4.7	31	6,694	-15.2	45	220	13.4	31	6,371	-25.8	45	236	5.4
400----	31	7,595	-20.3	38	296	14.0	31	7,588	-19.3	32	309	14.2	31	7,616	-17.8	49	109	3.7	31	7,582	-21.6	40	224	14.2	31	7,224	-32.4	42	227	5.4
350----	31	8,571	-27.2	34	286	18.3	31	8,567	-26.3		303	16.9	31	8,601	-24.8	43	161	2.7	31	8,554	-28.4	30	230	15.7	31	8,152	-39.5		182	6.6
300----	31	9,664	-35.2		277	23.5	31	9,664	-34.6		295	19.2	31	9,704	-33.0	36	220	1.4	31	9,642	-36.1		229	20.6	31	9,191	-46.5		250	5.6
250----	31	10,911	-44.3		275	29.9	31	10,913	-43.9		286	22.5	31	10,961	-42.7		234	6.4	31	10,887	-44.4		235	28.0	31	10,389	-50.8		267	10.7
200----	31	12,376	-53.8		277	30.5	31	12,380	-54.0		280	24.7	31	12,429	-54.4		261	4.7	31	12,354	-53.2		237	30.7	31	11,844	-48.9		290	8.5
175----	31	13,226	-58.3		275	27.6	31	13,227	-58.7		280	25.5	31	13,272	-60.4		270	4.5	31	13,207	-57.5		240	29.0	31	12,726	-47.3		305	6.8
150----	31	14,187	-62.2		280	21.0	31	14,186	-62.9		286	21.0	31	14,220	-66.0		281	4.7	31	14,172	-61.5		245	21.4	31	13,747	-46.8		319	5.4
125----	31	15,306	-65.3		287	14.8	31	15,297	-66.1		293	13.0	30	15,316	-69.7		51	2.9	31	15,295	-64.5		245	13.0	31	14,956	-46.7		305	6.0
100----	31	16,664	-65.1		298	6.0	31	16,647	-66.8		342	4.1	30	16,642	-70.5		79	5.8	31	16,655	-65.5		206	6.0	31	16,437	-46.6		312	2.1
80-----	31	18,025	-64.1		39	4.1	31	18,005	-64.1		56	7.6	30	17,977	-66.5		79	12.0	31	18,018	-63.3		108	5.6	31	17,919	-46.0		24	1.7
60-----	29	19,808	-59.1		81	10.5	29	19,792	-57.9		81	13.8	30	19,738	-61.0		87	23.1	31	19,807	-57.8		91	10.5	30	19,833	-45.4		55	4.1
50-----	28	20,961	-56.4		86	13.4	27	20,952	-54.9		89	15.9	30	20,882	-56.7		87	28.0	30	20,960	-55.1		85	12.8	29	21,048	-45.2		69	7.0
40-----	27	22,388	-53.1		86	15.7	27	22,388	-52.2		91	17.1	30	22,308	-53.1		89	28.2	27	22,395	-52.6		82	15.5	28	22,539	-44.8		74	9.1
30-----	26	24,257	-50.7		87	17.5	25	24,255	-50.1		86	19.0	29	24,171	-50.6		84	29.0	27	24,264	-49.8		76	17.7	27	24,466	-43.8		86	10.7
25-----	26	25,450	-49.2		87	19.2	23	25,452	-48.8		86	22.2	29	25,363	-48.7		83	31.3	26	25,458	-48.2		80	19.8	22	25,685	-42.4		83	11.9
20-----	25	26,917	-47.5		87	20.0	19	26,915	-46.6		83	23.7	28	26,835	-46.6		83	32.8	25	26,934	-45.7		79	22.5	20	27,194	-40.8		85	15.0
15-----	20	28,826	-44.9		86	23.5	13	28,831	-43.9				21	28,759	-43.8		88	35.8	23	28,862	-42.5		88	23.3	12	29,144	-38.4		93	16.1
10-----	14	31,562	-41.0		89	28.4													10	31,632	-37.8				7	31,956	-34.8			
7------	7	33,996	-38.9																											

Standard pressure surface (mb.)	FLINT, MICH. (989 MB.)						FORT WORTH, TEX. (995 MB.)						GLASGOW, MONT. (935 MB.)						GRAND JUNCTION, COLO. (855 MB.)						GREAT FALLS, MONT. (890 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	234	15.6	87	242	2.5	31	180	24.4	82	159	2.3	31	696	17.0	63	69	3.7	31	1,474	20.3	33	119	8.9	31	1,123	17.3	46	232	5.1
1,000--	30	138					31	130					31	112					31	86					31	109				
950----	30	575	17.5	65	279	5.8	31	585	23.5	74	197	11.3	31	554					31	539					31	556				
900----	30	1,037	15.1	64	287	9.1	31	1,054	21.8	69	207	10.5	31	1,022	21.0	49	39	.8	31	1,019					31	1,030				
850----	30	1,519	11.9	64	294	9.9	31	1,549	19.2	67	208	7.6	31	1,516	19.5	40	303	3.9	31	1,520	21.0	33	121	9.7	31	1,519	19.4	39	249	6.0
800----	30	2,025	9.1	57	297	11.7	31	2,069	16.1	63	217	4.9	31	2,035	15.9	40	291	8.5	31	2,045	20.8	32	133	9.7	31	2,039	16.5	37	265	5.8
750----	30	2,556	6.9	45	294	13.0	31	2,613	12.7	58	221	3.7	31	2,575	11.8	43	298	12.0	31	2,597	17.7	32	164	6.0	31	2,581	12.6	39	268	8.2
700----	30	3,123	3.8	43	293	15.7	31	3,192	8.8	55	239	3.1	31	3,153	7.3	45	293	14.4	31	3,185	13.4	34	246	2.9	31	3,160	8.1	41	265	10.9
650----	30	3,716	.6	39	291	17.7	31	3,799	4.9	53	258	3.7	31	3,754	2.6	48	287	17.5	31	3,798	8.3	39	277	4.9	31	3,762	3.4	44	259	15.3
600----	30	4,360	- 3.0	35	291	20.4	31	4,451	1.1	45	265	4.1	31	4,401	- 2.2	46	291	19.0	31	4,458	2.8	47	284	6.2	31	4,411	- 1.5	44	259	19.2
550----	30	5,035	- 6.7		291	24.3	31	5,140	- 2.9	39	281	4.7	31	5,076	- 7.0	40	292	21.0	31	5,145	- 3.1	51	289	7.6	31	5,089	- 6.3	45	261	19.8
500----	30	5,783	-11.2		289	26.8	31	5,896	- 6.9	32	276	3.7	31	5,824	-11.9	34	289	23.1	31	5,902	- 9.2	54	282	8.2	31	5,839	-11.6	35	265	20.8
450----	30	6,575	-16.5		289	28.4	31	6,708	-11.8		299	4.1	31	6,613	-17.6		294	21.6	31	6,705	-14.8	48	269	10.9	31	6,632	-17.2	32	267	20.0
400----	30	7,460	-22.9		290	30.7	31	7,604	-17.8		304	6.4	31	7,496	-23.9		286	27.0	31	7,591	-20.6	34	258	14.4	31	7,513	-23.5		268	23.1
350----	30	8,424	-30.1		287	32.8	31	8,589	-24.7		306	7.6	31	8,457	-31.2		287	30.9	31	8,565	-27.5		252	16.5	31	8,475	-30.9		266	26.2
300----	30	9,503	-38.1		289	36.1	31	9,693	-32.8		306	7.8	31	9,531	-39.4		285	35.4	31	9,657	-35.1		253	22.7	31	9,550	-39.1		267	29.5
250----	30	10,735	-46.8		288	43.1	31	10,951	-42.7		313	7.2	31	10,758	-47.3		284	39.6	31	10,904	-44.2		251	28.0	31	10,778	-47.1		268	35.0
200----	29	12,191	-53.2		286	44.5	31	12,421	-54.1		295	3.7	31	12,211	-53.9		282	42.2	31	12,367	-54.0		253	31.1	31	12,232	-53.9		266	39.8
175----	29	13,047	-55.0		285	48.0	31	13,267	-59.9		273	6.4	31	13,067	-54.7		284	40.8	31	13,215	-58.9		256	27.2	31	13,086	-55.2		263	42.9
150----	29	14,029	-56.4		290	40.2	31	14,216	-65.6		270	7.0	31	14,050	-56.3		286	35.2	31	14,173	-62.7		259	22.0	30	14,065	-56.5		264	36.5
125----	29	15,183	-58.0		290	29.3	31	15,314	-69.4		287	2.1	31	15,204	-57.9		288	26.8	31	15,287	-66.2		269	12.2	29	15,213	-58.7		265	26.8
100----	29	16,585	-58.8		293	21.8	30	16,642	-70.0		62	6.0	31	16,608	-58.4		295	17.7	31	16,639	-65.9		295	1.9	28	16,609	-59.4		269	16.1
80-----	29	17,989	-57.9		312	10.5	30	17,983	-65.5		80	12.8	31	18,015	-56.9		311	8.7	31	18,001	-63.5		81	7.4	28	18,010	-57.5		281	4.3
60-----	28	19,818	-54.0		44	4.5	30	19,758	-59.8		85	19.4	31	19,850	-53.6		63	4.9	31	19,790	-58.3		79	14.4	28	19,840	-54.2		88	4.3
50-----	28	20,994	-51.7		72	8.2	30	20,908	-56.0		87	23.5	31	21,029	-51.5		72	7.6	31	20,946	-54.8		83	18.7	26	21,012	-52.4		87	8.0
40-----	27	22,452	-49.9		89	11.9	30	22,338	-53.3		93	26.4	31	22,482	-49.7		82	11.5	29	22,382	-51.9		84	19.4	23	22,459	-50.4		79	10.3
30-----	26	24,344	-47.5		90	16.5	28	24,205	-50.0		86	29.3	28	24,379	-47.2		87	15.3	29	24,257	-49.6		83	22.9	23	24,348	-47.7		83	14.6
25-----	25	25,550	-46.4		89	17.7	26	25,402	-48.4		87	30.5	28	25,590	-45.4		90	16.1	27	25,452	-48.1		82	26.0	23	25,555	-46.5		83	15.9
20-----	23	27,035	-43.7		82	20.2	24	26,873	-46.3		86	32.3	26	27,087	-43.0		79	15.5	22	26,928	-45.6		89	27.2	17	27,050	-43.8		85	19.8
15-----	17	28,978	-39.9		84	26.8	18	28,798	-43.1		87	36.7	20	29,041	-39.6		86	21.0	15	28,854	-42.3		87	27.2	15	28,990	-39.8		89	23.7
10-----	[illegible]	31,784	-36.0				7	31,570	-38.1				13	31,848	-34.4		90	31.7												
7------													8	34,423	-28.7															

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JULY 1960

Standard pressure surface (mb.)	GREEN BAY, WIS. (991 MB.)						GREENSBORO, N. C. (985 MB.)						HILO, HAWAII (1016 MB.)						INTERNAT. FALLS, MINN. (973 MB.)						JACKASS FLATS, NEV. (890 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	210	14.4	89	296	1.4	31	273	20.0	91	40	0.8	31	11	21.2	87	242	5.2	31	360	12.6	81	223	1.7	30	1,100	22.1	22	25	3.9
1,000--	31	131					31	145					31	148	22.8	80	243	3.9	31	127					30	78				
950----	31	569	17.1	65	290	4.1	31	593	20.9	77	301	2.5	31	592	19.9	83	85	2.9	31	566	16.5	69	251	5.4	30	528				
900----	31	1,030	14.8	64	300	6.6	31	1,057	19.0	72	302	4.3	31	1,059	16.7	86	81	6.0	31	1,021	15.4	61	281	9.1	30	1,009				
850----	31	1,511	11.7	64	301	8.5	31	1,547	15.9	72	292	6.2	31	1,546	13.5	88	82	7.2	31	1,504	12.4	61	298	10.9	30	1,515	26.1	21	185	4.1
800----	31	2,015	8.6	61	296	11.7	31	2,060	12.7	73	280	8.7	31	2,063	10.8	83	86	9.9	31	2,010	9.2	55	301	13.2	30	2,045	22.8	22	204	8.0
750----	31	2,545	6.3	50	297	14.6	31	2,601	9.4	73	285	10.1	31	2,595	9.8	54	91	11.1	31	2,542	6.1	51	302	16.5	30	2,596	18.6	25	215	7.0
700----	31	3,110	3.5	44	301	16.9	31	3,170	6.5	63	279	11.3	31	3,166	8.0	33	94	10.7	31	3,105	3.2	45	304	19.6	30	3,189	13.7	29	192	6.0
650----	31	3,706	.2	42	306	18.8	31	3,773	3.7	52	277	12.4	31	3,774	5.6		96	10.1	31	3,699	- .3	43	307	23.5	30	3,801	8.4	35	164	7.6
600----	31	4,346	- 3.3	38	304	20.8	31	4,423	.7	44	273	15.0	31	4,427	3.2		93	8.7	31	4,339	- 4.0	40	308	26.2	30	4,464	3.0	39	166	11.5
550----	31	5,023	- 7.4	35	302	23.5	31	5,113	- 2.8	35	270	15.7	31	5,121	- 1.0		95	7.8	31	5,012	- 8.1	37	308	29.0	30	5,155	- 2.6	41	169	12.2
500----	31	5,766	-12.1	33	301	25.1	31	5,867	- 7.3	33	271	17.5	31	5,883	- 5.5		95	5.4	31	5,755	-13.0	38	306	29.9	30	5,911	- 8.1	36	186	11.9
450----	31	6,558	-17.5		302	27.6	31	6,676	-12.7	32	270	19.0	31	6,697	-11.3		130	3.1	31	6,543	-18.5	32	306	33.2	30	6,713	-14.1	37	203	12.6
400----	31	7,437	-23.6		300	30.1	31	7,569	-18.8	33	274	23.1	31	7,597	-18.5		198	4.7	31	7,421	-24.6		307	36.5	30	7,605	-20.5	33	209	14.0
350----	31	8,399	-30.5		296	32.8	31	8,552	-25.2		276	25.8	30	8,576	-26.1		227	8.2	31	8,379	-31.7		306	40.4	29	8,582	-26.9		217	17.3
300----	31	9,477	-38.5		295	35.8	31	9,653	-33.2		281	31.3	30	9,672	-34.8		250	13.8	31	9,451	-39.8		307	43.3	29	9,677	-34.4		226	19.2
250----	31	10,706	-47.4		297	42.6	31	10,909	-42.8		280	35.6	30	10,920	-44.5		254	21.8	31	10,675	-48.1		305	48.2	29	10,929	-43.1		226	22.0
200----	31	12,158	-53.6		297	46.6	31	12,378	-53.7		285	40.0	30	12,379	-55.4		254	29.0	31	12,127	-53.0		302	51.3	28	12,404	-52.7		230	26.0
175----	31	13,015	-54.3		295	43.5	31	13,225	-59.1		290	35.4	30	13,219	-61.2		247	28.8	31	12,988	-53.3		303	48.6	27	13,255	-57.9		231	26.2
150----	31	14,000	-55.7		296	37.3	31	14,181	-63.4		287	30.1	28	14,167	-66.3		234	24.1	31	13,978	-54.0		298	42.6	27	14,217	-62.4		235	23.3
125----	31	15,156	-57.5		294	32.4	31	15,293	-66.0		291	20.8	25	15,257	-71.1		220	17.3	31	15,145	-55.1		300	34.4	27	15,330	-66.2		233	11.7
100----	31	16,562	-58.4		299	24.3	31	16,646	-66.1		310	10.3	20	16,570	-72.8		136	9.5	31	16,569	-55.5		305	24.3	27	16,680	-67.1		181	5.4
80-----	31	17,967	-57.3		316	13.6	30	18,010	-62.9		16	4.9	18	17,888	-69.2		92	17.9	31	17,994	-54.5		318	13.2	27	18,033	-65.1		105	8.9
60-----	31	19,797	-54.2		25	7.4	29	19,806	-57.2		84	14.0	18	19,625	-64.3		87	29.1	31	19,846	-52.0		357	7.0	26	19,808	-59.3		92	11.7
50-----	30	20,974	-52.1		66	8.9	29	20,967	-54.1		86	18.1	18	20,749	-61.2		83	35.8	31	21,030	-50.5		53	6.6	24	20,954	-56.5		87	14.4
40-----	30	22,425	-50.2		79	11.3	29	22,409	-51.1		91	21.2	18	22,147	-57.2		84	40.6	30	22,489	-49.0		77	9.9	21	22,378	-53.9		87	18.5
30-----	29	24,311	-48.1		85	14.2	28	24,291	-48.5		89	23.1	18	23,985	-53.1		81	47.2	28	24,389	-46.8		81	13.8	21	24,234	-51.6		89	22.2
25-----	29	25,516	-46.5		86	17.5	27	25,497	-46.6		87	23.3	16	25,168	-51.1		83	49.4	26	25,604	-45.0		85	15.5	19	25,426	-50.1		92	24.7
20-----	29	27,008	-43.5		85	19.8	26	26,985	-44.9		88	25.8	15	26,628	-48.9		85	49.9	22	27,101	-42.9		90	17.7	17	26,886	-48.1		87	25.8
15-----	24	28,951	-40.6		85	22.5	22	28,928	-41.5		88	27.8							13	29,051	-39.7				12	28,788	-45.1		92	26.8
10-----	8	31,765	-35.1				7	31,703	-39.2																5	31,535	-39.7			

Standard pressure surface (mb.)	JACKSON, MISS. (1004 MB.)						JACKSONVILLE, FLA. (1015 MB.)						JOHNSTON IS., PACIFIC AREA (1014 MB.)						KING SALMON, ALASKA (1013 MB.)						KOTZEBUE, ALASKA (1012 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	101	23.1	87	261	0.6	31	6	24.3	95	233	3.1	31	3	26.3	76	75	13.8	31	15	9.8	90	174	5.6	31	5	10.5	88	291	4.5
1,000--	31	127	23.5	84	254	.6	31	139	24.4	89	244	5.4	31	128	25.2	76	78	15.0	31	120	10.3	84	183	7.4	31	107	11.5	78	290	3.9
950----	31	575	24.3	71	287	3.3	31	586	23.2	78	253	8.5	31	578	21.6	79	86	17.3	31	548	9.4	75	182	8.0	31	536	11.7	66	291	3.1
900----	31	1,051	21.5	70	267	4.7	31	1,060	20.7	74	241	8.4	31	1,046	18.7	75	88	18.1	31	995	6.9	75	183	4.1	31	989	9.1	68	246	2.9
850----	31	1,546	18.3	71	266	6.4	31	1,553	17.8	71	238	7.6	31	1,535	15.6	73	87	17.3	31	1,464	4.3	72	158	2.5	31	1,461	6.5	66	225	3.3
800----	31	2,063	15.0	69	281	6.6	31	2,070	14.8	69	240	7.0	31	2,048	12.6	64	92	14.0	31	1,956	2.0	70	144	2.3	31	1,957	3.6	66	234	2.3
750----	31	2,602	11.7	63	287	6.4	31	2,611	11.8	67	246	6.4	31	2,586	10.7	49	90	12.8	31	2,473	- .6	67	87	.8	31	2,479	.6	61	226	.6
700----	31	3,183	8.5	56	294	7.0	31	3,189	8.5	66	253	6.6	31	3,162	8.6	34	90	8.2	31	3,024	- 3.6	64	328	1.4	31	3,030	- 2.5	59	315	.8
650----	31	3,787	4.7	52	300	6.8	31	3,794	5.1	63	249	6.8	31	3,767	6.0		92	6.0	31	3,602	- 6.8	60	319	2.3	31	3,610	- 5.9	56	313	2.5
600----	31	4,441	1.0	47	301	5.6	31	4,449	1.7	58	252	6.4	31	4,424	2.7		109	1.9	31	4,228	-10.3	56	312	4.7	31	4,239	- 9.7	52	319	4.1
550----	31	5,132	- 2.8	36	315	6.0	31	5,138	- 2.0	52	254	5.1	31	5,114	- 1.8		177	2.7	31	4,890	-14.1	49	314	7.0	31	4,898	-13.8	45	325	4.7
500----	31	5,886	- 7.0	34	305	6.6	31	5,898	- 6.1	47	284	4.5	31	5,874	- 6.6		209	4.7	31	5,612	-18.6	45	323	10.5	31	5,625	-18.7	46	324	8.0
450----	31	6,695	-11.8	29	297	7.8	31	6,706	-11.0	40	295	4.7	31	6,679	-12.1		242	7.2	31	6,388	-23.7	43	319	12.8	31	6,397	-24.0	48	327	11.5
400----	31	7,594	-17.5		306	8.5	31	7,611	-17.2	36	306	4.7	31	7,582	-18.2		256	12.4	31	7,243	-29.6	41	334	16.3	31	7,253	-30.2	45	330	14.0
350----	31	8,581	-24.1		311	9.1	31	8,599	-23.9	35	319	5.2	31	8,566	-25.3		263	19.6	31	8,182	-36.5		332	18.3	30	8,185	-37.3		327	15.5
300----	31	9,689	-32.1		304	10.3	31	9,706	-32.1		337	6.0	31	9,668	-33.6		265	26.6	31	9,234	-44.1		331	22.5	30	9,233	-44.7		333	15.3
250----	31	10,951	-41.7		300	8.9	31	10,967	-42.2		326	7.8	31	10,923	-43.4		267	34.8	31	10,440	-50.1		328	23.5	30	10,436	-50.9		326	19.4
200----	31	12,427	-53.2		301	9.1	31	12,438	-54.0		344	9.5	31	12,389	-55.1		271	41.0	31	11,895	-49.6		326	16.5	29	11,883	-50.0		319	14.6
175----	31	13,275	-59.4		299	9.5	31	13,282	-60.5		335	10.3	31	13,230	-61.7		270	40.4	31	12,772	-48.2		313	14.4	29	12,761	-47.5		323	10.9
150----	31	14,227	-65.3		308	9.3	31	14,228	-66.3		357	12.2	31	14,171	-68.1		266	37.3	31	13,788	-48.2		313	9.3	29	13,781	-47.1		326	8.4
125----	31	15,324	-69.7		345	5.6	30	15,321	-69.9		26	10.1	30	15,254	-71.3		259	26.0	31	14,989	-48.5		329	6.8	29	14,989	-47.1		334	6.4
100----	31	16,651	-69.7		58	8.2	30	16,649	-69.6		54	9.3	26	16,574	-72.2		187	7.0	31	16,459	-48.1		3	3.9	29	16,468	-46.6		4	3.9
80-----	31	17,994	-65.4		87	13.4	29	17,991	-65.7		69	13.8	25	17,896	-68.7		95	17.9	29	17,931	-47.9		54	2.7	28	17,951	-45.4		45	3.5
60-----	31	19,769	-59.2		88	19.6	28	19,764	-59.6		83	27.4	25	19,636	-64.0		89	30.7	27	19,832	-47.7		76	6.8	28	19,872	-44.7		68	5.8
50-----	31	20,921	-55.5		90	24.5	27	20,916	-56.4		92	33.0	25	20,762	-60.6		88	37.1	27	21,037	-47.3		74	8.9	28	21,092	-44.4		74	8.0
40-----	31	22,353	-52.6		93	28.2	26	22,348	-52.2		96	34.2	25	22,164	-57.1		89	45.1	24	22,506	-47.0		78	10.7	27	22,585	-44.1		79	10.1
30-----	29	24,225	-49.5		92	29.5	24	24,224	-49.4		92	31.1	25	24,007	-52.1		90	52.3	21	24,416	-45.8		83	12.8	26	24,519	-42.8		86	11.1
25-----	29	25,423	-47.7		90	32.1	20	25,421	-47.6		85	32.4	25	25,195	-49.5		89	56.2	16	25,626	-44.9		86	15.7	26	25,753	-41.0		86	12.6
20-----	28	26,901	-45.5		90	32.6	20	26,901	-45.4		82	35.6	23	26,667	-47.2		89	54.8	10	27,101	-43.0				23	27,272	-38.8		85	13.4
15-----	23	28,829	-42.5		92	34.6	13	28,835	-41.9				9	28,580	-45.2										16	29,262	-35.9		79	17.5
10-----	18	31,605	-37.1																											

Standard pressure surface (mb.)	LAKE CHARLES, LA. (1015 MB.)						LANDER, WYO. (833 MB.)						LAS VEGAS, NEV. (936 MB.)						LIHUE, HAWAII (1014 MB.)						LITTLE ROCK, ARK. (1006 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	5	24.2	91	326	2.1	31	1,696	16.1	46	240	2.9	31	660	27.0	21	223	4.5	31	36	24.0	79	43	8.9	31	79	22.2	89	323	0.8
1,000--	31	134	25.5	84	264	3.7	31	113					31	64					31	153	23.2	79	51	12.2	31	132	22.6	85	308	1.4
950----	31	587	24.2	77	250	7.0	31	557					31	520					31	598	19.5	83	72	14.4	31	581	23.3	71	286	3.1
900----	31	1,060	21.4	72	226	6.0	31	1,028					31	1,008	29.9	20	224	6.6	31	1,064	15.9	85	82	14.6	31	1,053	20.6	70	259	5.2
850----	31	1,555	18.5	67	207	5.1	31	1,526					31	1,515	26.9	20	241	5.1	31	1,548	12.8	81	85	14.2	31	1,546	17.6	65	264	6.4
800----	31	2,073	15.3	65	212	4.9	31	2,045	18.2	35	245	1.7	31	2,045	22.6	23	214	6.2	31	2,056	10.5	69	91	13.0	31	2,063	14.9	60	259	9.7
750----	31	2,614	12.2	60	229	3.5	31	2,587	15.1	34	263	2.1	31	2,596	17.8	28	190	5.8	31	2,595	9.0	46	97	13.0	31	2,601	11.7	56	263	7.8
700----	31	3,195	8.6	59	263	1.7	31	3,175	11.1	37	274	4.9	31	3,186	12.7	32	164	5.8	31	3,163	7.2	31	96	10.9	31	3,182	8.3	55	270	9.1
650----	31	3,801	5.0	54	338	2.1	31	3,779	6.4	43	281	8.9	31	3,796	7.7	37	156	7.8	31	3,770	5.3		114	10.1	31	3,785	4.8	53	289	9.5
600----	31	4,455	1.5	45	351	1.9	31	4,440	1.3	49	283	13.8	31	4,455	2.2	42	149	8.4	31	4,421	2.2		122	7.8	31	4,440	1.3	49	290	10.7
550----	31	5,145	- 2.4	41	22	2.1	31	5,122	- 4.4	52	285	17.3	31	5,145	- 3.2	42	158	9.9	31	5,111	- 2.2		151	4.3	31	5,128	- 2.7	38	284	10.1
500----	31	5,903	- 6.6	33	25	1.4	31	5,876	-10.2	49	285	17.3	31	5,900	- 8.9	41	182	8.5	31	5,869	- 7.0		188	4.9	31	5,887	- 7.0	37	283	11.3
450----	31	6,716	-11.6	31	16	1.9	31	6,671	-15.7	41	278	16.7	31	6,700	-14.7	38	194	9.5	31	6,679	-12.9		217	7.2	31	6,699	-11.7	32	292	12.2
400----	31	7,614	-17.3	31	24	4.1	31	7,560	-21.8	37	273	18.7	31	7,588	-20.6		207	11.7	31	7,570	-19.7		227	12.4	31	7,597	-17.7	31	295	13.2
350----	31	8,602	-24.0		24	4.9	31	8,529	-28.8		270	23.1	31	8,563	-27.4		218	14.8	31	8,547	-27.3		236	17.1	30	8,581	-24.3		298	16.3
300----	31	9,710	-32.0		47	2.1	31	9,614	-36.8		270	27.2	31	9,656	-34.9		223	16.5	31	9,637	-36.2		249	21.0	30	9,687	-32.4		298	14.2
250----	31	10,973	-41.7		157	.6	31	10,852	-45.6		270	33.2	31	10,906	-43.5		222	20.0	31	10,877	-45.9		250	28.4	30	10,947	-41.9		287	19.8
200----	31	12,450	-53.2		184	3.1	31	12,310	-54.2		269	36.5	31	12,374	-53.4		226	21.0	31	12,328	-56.3		256	38.7	30	12,423	-53.1		284	18.8
175----	31	13,298	-59.6		181	3.3	31	13,160	-57.4		271	33.8	31	13,224	-58.1		235	20.8	31	13,166	-61.4		255	42.7	30	13,272	-58.8		291	19.8
150----	31	14,249	-65.7		323	1.2	31	14,128	-60.1		272	27.2	31	14,184	-63.1		239	18.7	29	14,114	-65.4		248	37.1	29	14,228	-64.2		283	15.2
125----	31	15,343	-70.6		44	4.9	31	15,259	-63.0		272	17.5	31	15,294	-66.8		238	8.7	27	15,216	-67.1		236	23.5	29	15,333	-67.8		290	8.9
100----	31	16,664	-70.3		67	10.1	31	16,629	-63.3		278	6.8	31	16,636	-68.0		155	3.7	19	16,558	-69.7		173	10.7	29	16,674	-67.6		29	2.9
80-----	30	18,003	-66.4		90	16.1	31	18,008	-60.8		35	1.4	31	17,983	-65.1		97	9.9	14	17,887	-67.0		107	15.9	29	18,025	-64.3		77	9.5
60-----	30	19,773	-60.0		81	22.9	30	19,811	-56.4		82	9.9	31	19,758	-59.1		95	14.0	12	19,637	-62.4		91	27.8	29	19,810	-58.2		91	16.5
50-----	30	20,921	-56.7		86	27.8	29	20,976	-53.7		85	10.9	31	20,908	-55.9		89	16.3	10	20,770	-59.5		95	37.5	29	20,966	-54.9		92	21.2
40-----	29	22,349	-53.2		94	32.1	29	22,417	-51.5		87	14.2	31	22,337	-53.3		88	19.6	10	22,179	-55.5		95	42.2	26	22,402	-51.7		96	22.9
30-----	26	24,221	-50.0		91	33.2	29	24,296	-49.0		88	18.8	30	24,198	-50.5		88	22.7	9	24,028	-51.7				26	24,275	-49.7		90	22.3
25-----	26	25,420	-47.6		87	35.0	28	25,494	-47.2		88	20.8	28	25,393	-48.7		86	25.8	8	25,219	-49.4				22	25,482	-48.3		90	25.1
20-----	23	26,900	-45.8		85	36.9	25	26,982	-44.9		91	21.6	24	26,862	-46.1		89	28.0							19	26,954	-46.2		89	29.5
15-----	20	28,830	-43.2		87	39.8	24	28,922	-41.3		93	25.8	15	28,786	-42.2		90	28.6							10	28,910	-42.9			
10-----	15	31,574	-38.5				21	31,699	-35.6		91	28.4																		

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JULY 1960

McGRATH, ALASKA
(1001 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	103	11.8	79	186	1.7
1,000	30	109			267	1.2
950	30	541	12.8	66	256	1.9
900	30	992	9.9	67	240	1.7
850	30	1,465	6.6	70	209	3.3
800	30	1,960	3.3	70	198	4.7
750	30	2,483	-.1	69	176	4.1
700	30	3,030	-3.6	67	190	4.7
650	30	3,609	-7.3	63	174	2.9
600	30	4,232	-10.9	54	143	2.1
550	30	4,895	-15.0	50	208	.6
500	30	5,611	-19.6	46	334	2.3
450	30	6,384	-24.8	45	345	4.7
400	30	7,234	-30.7	44	330	6.8
350	30	8,169	-37.2	40	324	9.1
300	30	9,219	-44.4		323	11.3
250	30	10,423	-50.2		285	7.8
200	30	11,877	-49.6		309	6.8
175	30	12,755	-47.9		309	4.1
150	30	13,773	-47.6		304	7.2
125	30	14,977	-48.0		284	5.1
100	30	16,450	-47.6		311	1.7
80	29	17,929	-47.0		32	.6
60	29	19,837	-46.5		83	4.9
50	29	21,049	-46.2		81	5.6
40	28	22,534	-46.0		89	8.0
30	25	24,451	-45.2		89	11.3
25	23	25,670	-44.0		88	12.0
20	16	27,175	-42.3		86	12.6
15	9	29,136	-39.9			
10						

MEDFORD, OREG.
(970 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	401	15.9	67	156	0.6
1,000	31	137				
950	31	583	18.5	56	283	1.4
900	31	1,041	17.7	52	292	2.1
850	31	1,529	16.4	49	55	1.0
800	31	2,045	15.4	38	121	2.7
750	31	2,585	12.3	37	198	8.0
700	31	3,164	8.3	36	203	11.9
650	31	3,764	4.1	33	207	14.0
600	31	4,418	-.2	27	208	14.0
550	31	5,095	-5.0		212	16.1
500	31	5,851	-10.1		219	16.7
450	31	6,646	-16.0		222	17.1
400	31	7,531	-22.7		225	18.1
350	31	8,497	-30.1		226	21.4
300	31	9,576	-38.4		226	24.7
250	31	10,808	-46.7		225	28.8
200	31	12,265	-53.4		228	34.2
175	31	13,120	-55.4		232	36.9
150	31	14,098	-57.8		233	33.2
125	31	15,242	-60.3		229	22.9
100	30	16,625	-61.3		219	15.0
80	30	18,015	-59.7		196	8.0
60	29	19,823	-56.1		112	8.4
50	29	20,987	-54.1		96	11.1
40	29	22,428	-51.6		89	14.0
30	27	24,309	-49.5		89	17.5
25	26	25,506	-47.7		89	19.4
20	26	26,987	-45.3		85	22.0
15	24	28,925	-41.8		93	24.9
10	8	31,693	-36.4			

MIAMI, FLA.
(1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	25.9	87	164	0.8
1,000	31	142	26.1	81	177	3.5
950	31	592	23.3	78	166	8.4
900	31	1,065	20.3	74	167	8.9
850	31	1,557	17.2	68	171	7.2
800	31	2,073	14.3	60	166	5.4
750	31	2,611	11.5	55	156	4.1
700	31	3,191	8.5	49	151	4.5
650	31	3,797	5.1	48	132	4.1
600	31	4,450	1.3	47	137	3.3
550	31	5,139	-2.5	42	154	3.1
500	31	5,897	-7.0	38	131	1.9
450	31	6,706	-12.0	39	98	2.7
400	31	7,605	-17.7	36	83	4.3
350	31	8,590	-24.6	34	66	5.6
300	31	9,695	-32.7		59	11.1
250	31	10,953	-42.5		57	15.3
200	31	12,421	-54.5		50	20.4
175	30	13,264	-61.2		49	25.6
150	30	14,207	-67.1		49	23.1
125	30	15,295	-70.9		55	18.8
100	30	16,616	-70.8		73	17.9
80	30	17,944	-68.4		76	19.6
60	30	19,692	-62.6		81	30.9
50	30	20,827	-58.6		88	40.0
40	30	22,242	-54.4		96	43.5
30	29	24,105	-50.1		92	43.1
25	26	25,302	-48.2		88	42.0
20	22	26,779	-45.8		83	43.3
15	17	28,696	-43.4		83	43.1
10						

MIDLAND, TEX.
(917 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	871	21.1	77	114	2.5
1,000	31	113				
950	31	563				
900	31	1,035	21.6	70	142	5.8
850	31	1,531	20.3	63	167	9.7
800	31	2,053	17.6	58	141	5.4
750	31	2,599	14.0	56	119	5.6
700	30	3,181	10.0	53	112	4.7
650	30	3,788	6.0	55	86	2.1
600	30	4,444	1.8	52	85	2.3
550	30	5,132	-2.5	48	87	2.7
500	30	5,892	-6.9	40	110	1.7
450	30	6,703	-12.0	34	129	2.1
400	30	7,599	-17.9	34	187	1.9
350	30	8,585	-24.7		217	1.6
300	30	9,688	-32.9		219	1.0
250	30	10,946	-42.7		283	2.1
200	29	12,416	-54.1		324	3.1
175	29	13,262	-59.9		319	1.9
150	29	14,212	-65.8		291	2.3
125	29	15,310	-68.8		31	1.7
100	29	16,639	-70.1		75	8.0
80	29	17,977	-66.3		86	14.8
60	29	19,744	-60.5		86	21.8
50	28	20,891	-57.1		89	27.2
40	28	22,315	-53.6		93	29.7
30	26	24,178	-50.2		88	32.3
25	25	25,376	-47.9		87	32.4
20	22	26,854	-45.6		86	39.1
15	17	28,780	-42.8		89	38.9
10	8	31,559	-37.1			

MONTGOMERY, ALA.
(1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	61	23.5	89	8	0.6
1,000	31	134	23.6	87	319	.8
950	31	585	23.8	77	286	3.1
900	31	1,057	21.1	74	275	3.7
850	31	1,550	18.1	73	276	4.1
800	31	2,068	14.9	70	300	4.7
750	31	2,618	11.6	65	307	4.9
700	31	3,187	8.3	61	309	6.4
650	31	3,794	4.9	56	310	6.8
600	31	4,447	1.4	51	297	6.8
550	31	5,136	-2.3	45	299	6.8
500	31	5,895	-6.4	44	301	7.2
450	31	6,703	-11.5	40	309	8.2
400	31	7,606	-17.2	35	309	8.7
350	31	8,596	-23.7		293	9.9
300	31	9,702	-31.9		292	11.1
250	31	10,965	-41.7		290	10.7
200	31	12,440	-53.3		287	11.5
175	31	13,289	-59.5		291	13.0
150	30	14,236	-65.2		304	12.2
125	30	15,333	-70.1		331	7.8
100	30	16,659	-69.7		43	6.4
80	30	17,998	-66.1		73	13.0
60	30	19,774	-58.7		85	20.2
50	30	20,929	-55.5		90	24.7
40	30	22,361	-52.4		93	27.4
30	30	24,234	-49.3		87	29.5
25	29	25,436	-47.6		87	30.5
20	26	26,913	-45.7		85	34.0
15	13	28,844	-42.2			
10						

NANTUCKET, MASS.
(1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	14	19.1	88	239	4.3
1,000	29	131	19.0	81	258	6.2
950	29	573	17.8	67	269	7.8
900	29	1,033	15.1	66	256	9.5
850	29	1,515	12.3	65	255	11.3
800	29	2,021	9.9	55	260	14.0
750	29	2,555	7.6	45	267	17.5
700	29	3,123	4.8	36	267	19.2
650	29	3,716	1.7	38	261	21.8
600	29	4,365	-1.9	35	261	24.3
550	29	5,042	-5.7		261	27.0
500	29	5,794	-10.3		260	29.0
450	29	6,590	-15.5		260	31.7
400	29	7,478	-21.6		257	35.4
350	29	8,449	-28.5		256	36.5
300	29	9,536	-36.7		255	36.9
250	29	10,775	-45.4		260	38.5
200	29	12,235	-53.8		267	41.4
175	29	13,088	-56.5		269	35.9
150	29	14,061	-58.5		265	32.6
125	29	15,205	-59.7		266	25.5
100	29	16,601	-59.1		269	17.3
80	29	18,004	-57.4		275	6.6
60	29	19,838	-53.8		98	4.1
50	29	21,014	-51.9		99	10.3
40	29	22,466	-50.1		95	12.6
30	27	24,355	-47.6		93	14.4
25	25	25,568	-45.8		90	16.3
20	22	27,053	-43.6		86	21.0
15	18	29,003	-39.9		86	22.3
10	5	31,797	-36.3			

NASHVILLE, TENN.
(995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	177	20.8	93		0.0
1,000	31	134				
950	31	576	21.9	75	272	2.9
900	31	1,050	19.2	73	285	5.1
850	31	1,540	16.3	66	274	7.4
800	31	2,055	13.4	63	279	9.1
750	31	2,592	10.6	56	281	10.1
700	31	3,170	7.2	50	282	11.3
650	31	3,774	3.9	41	288	12.4
600	31	4,424	.7	35	287	12.8
550	31	5,111	-3.4	37	287	14.8
500	31	5,866	-8.0	34	284	15.0
450	31	6,673	-13.2		279	17.9
400	31	7,567	-18.8		286	20.2
350	31	8,548	-25.4	35	283	26.0
300	31	9,650	-33.3		283	29.5
250	31	10,906	-42.8		280	34.8
200	31	12,376	-53.7		283	38.9
175	31	13,225	-58.8		287	34.4
150	31	14,180	-64.0		288	29.5
125	31	15,289	-66.9		295	20.6
100	31	16,635	-66.8		321	8.4
80	31	17,989	-64.1		54	8.0
60	31	19,775	-58.1		80	15.5
50	31	20,931	-54.9		87	19.6
40	30	22,367	-52.1		91	20.8
30	29	24,237	-49.7		87	22.5
25	28	25,432	-48.5		85	25.8
20	27	26,910	-45.5		84	28.2
15	22	28,838	-42.0		88	29.1
10	7	31,604	-36.6			

N. Y. INT. AP, IDLEWILD
(1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	20.3	79	320	4.9
1,000	31	133	19.6	73	299	5.2
950	31	574	18.0	66	310	6.4
900	31	1,036	15.1	65	290	6.0
850	31	1,518	12.0	69	269	7.8
800	31	2,024	9.4	60	275	10.7
750	31	2,558	7.0	52	277	13.8
700	31	3,123	4.0	48	275	16.1
650	31	3,721	1.0	44	274	18.3
600	31	4,362	-2.4	41	275	22.9
550	31	5,044	-6.2		269	23.9
500	31	5,789	-10.8	36	271	26.2
450	31	6,585	-16.1		267	27.4
400	31	7,468	-22.0		273	30.7
350	31	8,435	-29.2		273	34.4
300	31	9,520	-37.0		270	41.0
250	31	10,758	-45.6		276	44.3
200	31	12,217	-53.9		275	47.4
175	31	13,068	-56.8		277	46.6
150	31	14,040	-58.6		276	38.5
125	31	15,182	-60.3		276	28.8
100	31	16,572	-60.4		282	19.4
80	31	17,971	-58.1		289	6.8
60	31	19,798	-54.5		57	2.1
50	31	20,970	-52.8		85	7.2
40	31	22,417	-51.0		97	12.6
30	31	24,299	-48.6		91	14.8
25	31	25,504	-46.8		92	17.3
20	31	26,991	-44.3		85	20.8
15	30	28,934	-40.6		91	25.6
10	17	31,735	-33.7			

NOME, ALASKA
(1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	10.2	84	16	1.0
1,000	31	112	11.2	79	68	1.2
950	31	542	10.3	71	128	2.7
900	31	990	8.3	69	136	4.5
850	31	1,461	6.0	67	126	3.9
800	31	1,956	3.5	67	99	3.7
750	31	2,477	.6	64	94	3.3
700	31	3,028	-2.1	63	60	2.1
650	31	3,607	-5.2	61	25	2.3
600	31	4,239	-8.9	54	27	3.3
550	31	4,900	-13.1	49	15	4.5
500	31	5,628	-18.0	47	6	4.9
450	31	6,402	-23.4	42	360	6.0
400	31	7,259	-29.4	42	354	7.4
350	31	8,199	-36.6		329	6.8
300	31	9,248	-44.7		337	10.1
250	31	10,449	-51.0		325	12.8
200	31	11,896	-51.6		322	12.2
175	31	12,766	-49.7		326	9.9
150	31	13,778	-48.7		336	6.4
125	31	14,977	-48.7		338	4.5
100	31	16,446	-48.0		19	3.3
80	31	17,922	-46.8		56	4.1
60	30	19,833	-46.1		68	6.4
50	30	21,046	-46.0		72	8.4
40	29	22,532	-46.0		82	10.7
30	28	24,449	-44.6		86	13.2
25	28	25,673	-43.0		85	14.2
20	27	27,184	-41.1		79	17.5
15	23	29,151	-37.9		86	19.8
10	7	31,948	-34.4			

NORFOLK, VA.
(1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	9	22.0	82	229	1.6
1,000	31	141	22.4	77	244	2.1
950	31	586	20.5	69	283	2.9
900	31	1,052	17.8	69	344	4.1
850	31	1,540	14.9	68	325	6.4
800	31	2,051	11.8	67	314	9.7
750	31	2,589	9.3	56	288	12.6
700	31	3,159	6.6	47	270	17.5
650	31	3,761	3.5	42	267	18.7
600	31	4,410	.3	33	265	21.6
550	31	5,099	-3.5		262	25.6
500	31	5,851	-7.9		264	22.0
450	31	6,659	-13.2		266	24.3
400	31	7,550	-19.2		266	25.8
350	31	8,530	-25.9		271	28.8
300	31	9,628	-34.3		273	33.6
250	31	10,878	-43.6		274	38.5
200	31	12,344	-54.2		278	39.2
175	31	13,191	-59.0		280	38.5
150	31	14,148	-62.5		281	31.9
125	31	15,266	-64.9		283	22.5
100	31	16,629	-64.5		288	12.8
80	30	18,005	-61.3		354	3.9
60	30	19,812	-56.2		85	10.7
50	30	20,979	-53.6		89	14.6
40	29	22,422	-50.8		89	18.1
30	27	24,311	-47.7		92	20.2
25	25	25,521	-45.7		88	21.0
20	25	27,013	-43.7		85	24.1
15	20	28,971	-40.3		91	29.5
10	13	31,778	-34.4		90	36.9

NORTH PLATTE, NEBR.
(919 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	848	17.0	86	140	2.3
1,000	31	121				
950	31	568				
900	31	1,029	19.4	75	188	6.4
850	31	1,523	19.4	59	224	9.9
800	31	2,043	16.9	54	251	7.8
750	31	2,590	13.6	52	277	6.2
700	31	3,170	9.7	50	307	7.2
650	31	3,775	5.1	53	320	9.5
600	31	4,430	.4	51	331	12.0
550	31	5,114	-4.5	51	323	12.4
500	31	5,868	-9.0	41	304	13.6
450	31	6,674	-14.2		302	17.1
400	31	7,562	-20.6	33	303	18.8
350	31	8,536	-27.5		302	23.1
300	31	9,628	-35.4		292	28.6
250	31	10,874	-44.2		288	34.0
200	30	12,337	-53.6		287	35.9
175	30	13,189	-57.4		284	31.5
150	30	14,153	-61.3		288	27.6
125	30	15,278	-63.5		302	16.9
100	30	16,647	-63.6		324	7.8
80	30	18,019	-62.2		28	5.8
60	30	19,820	-56.5		77	11.5
50	30	20,982	-54.1		82	15.2
40	30	22,425	-51.1		85	19.0
30	28	24,302	-49.1		88	18.7
25	26	25,500	-48.0		87	20.8
20	24	26,975	-45.2		83	21.4
15	20	28,908	-41.7		88	24.1
10	9	31,669	-35.9			

OAKLAND, CALIF.
(1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	13.7	88	303	5.2
1,000	31	119	13.1	85	283	4.7
950	31	559	17.3	59	266	5.2
900	31	1,023	23.9	22	295	8.2
850	31	1,521	22.0	21	276	4.3
800	31	2,044	18.6	23	220	3.3
750	31	2,589	14.8		205	6.0
700	31	3,173	10.4	25	191	7.6
650	31	3,775	5.8	29	192	9.1
600	31	4,436	.9	34	194	11.1
550	31	5,115	-4.5	36	193	11.9
500	31	5,873	-9.6		197	11.9
450	31	6,665	-15.7		215	11.9
400	31	7,558	-21.9		222	13.4
350	31	8,528	-28.8		228	15.9
300	31	9,615	-36.5		228	21.2
250	31	10,858	-44.4		232	27.2
200	31	12,329	-52.4		231	32.3
175	31	13,187	-56.2		231	30.7
150	31	14,156	-60.7		232	25.8
125	31	15,282	-63.9		232	17.9
100	30	16,645	-65.1		212	7.6
80	30	18,010	-63.1		126	8.5
60	30	19,801	-58.4		105	12.0
50	29	20,956	-55.6		94	14.0
40	28	22,387	-52.7		89	18.5
30	27	24,254	-50.6		86	21.0
25	26	25,450	-49.0		89	24.3
20	20	26,924	-46.2		89	23.3
15	15	28,844	-43.5			
10						

OKLAHOMA CITY, OKLA.
(971 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	392	20.9	88	160	1.7
1,000	31	132				
950	31	580	22.5	74	178	5.1
900	31	1,050	21.4	64	214	8.0
850	31	1,544	18.7	63	246	6.4
800	31	2,063	15.8	63	271	6.4
750	31	2,604	12.7	57	292	6.2
700	31	3,186	9.3	55	308	7.0
650	31	3,791	5.6	53	301	8.2
600	31	4,447	1.4	56	309	8.5
550	31	5,130	-2.5	48	314	8.9
500	31	5,893	-6.9	43	304	11.1
450	31	6,700	-12.0	36	304	12.0
400	31	7,599	-17.9	36	298	12.2
350	31	8,585	-24.5		291	15.0
300	31	9,690	-32.7		281	16.1
250	31	10,948	-42.4		268	19.8
200	30	12,421	-53.6		272	20.0
175	29	13,269	-59.2		274	19.8
150	27	14,222	-64.3		281	15.2
125	27	15,327	-68.1		298	9.5
100	26	16,667	-67.8		17	4.9
80	26	18,017	-64.8		74	8.4
60	25	19,800	-58.3		83	15.9
50	25	20,956	-55.3		85	18.3
40	22	22,392	-52.4		92	21.6
30	20	24,260	-49.8		86	24.1
25	18	25,455	-48.3		82	27.6
20	17	26,933	-45.6		84	30.9
15	9	28,875	-43.0			
10						

OMAHA, NEBR.
(969 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	403	18.1	88	153	2.1
1,000	31	132				
950	31	581	20.2	74	186	4.3
900	31	1,042	18.9	64	237	4.9
850	31	1,532	16.1	62	279	4.9
800	31	2,046	13.0	59	312	6.6
750	31	2,585	10.1	53	323	8.5
700	31	3,158	7.2	41	328	11.1
650	31	3,763	3.6	38	326	12.8
600	31	4,410	-.2	38	324	14.4
550	31	5,095	-4.5	33	315	15.3
500	31	5,847	-9.1		311	15.7
450	31	6,648	-14.4		307	19.0
400	31	7,539	-20.6		305	21.8
350	31	8,513	-27.6		305	25.6
300	31	9,603	-35.8		300	28.8
250	31	10,847	-44.9		296	36.5
200	31	12,309	-53.7		288	42.0
175	31	13,159	-57.8		288	38.7
150	31	14,125	-60.4		293	29.5
125	30	15,255	-62.7		297	24.1
100	30	16,625	-63.7		303	14.4
80	29	17,999	-61.3		332	8.4
60	29	19,797	-56.8		57	8.9
50	29	20,962	-53.4		68	10.1
40	28	22,405	-50.9		87	13.0
30	27	24,285	-48.7		87	15.2
25	27	25,486	-47.4		87	15.7
20	27	26,967	-45.1		83	18.1
15	23	28,900	-41.5		85	23.3
10	8	31,699	-37.0			

PEORIA, ILL.
(993 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	201	17.4	89	356	0.6
1,000	31	137				
950	31	580	19.4	71	273	3.1
900	31	1,045	16.9	70	292	5.2
850	31	1,531	14.0	67	299	6.4
800	31	2,041	11.7	56	307	7.0
750	31	2,573	9.0	50	309	10.5
700	31	3,148	6.1	45	299	12.0
650	31	3,748	2.9	40	301	15.0
600	31	4,397	-.7	35	303	16.1
550	31	5,078	-4.8		299	17.5
500	31	5,831	-9.5		297	18.8
450	31	6,633	-14.8		297	22.0
400	31	7,519	-21.0		296	24.5
350	31	8,491	-28.3		297	29.1
300	31	9,579	-36.1		293	33.6
250	31	10,822	-44.6		292	42.2
200	31	12,287	-53.1		292	46.4
175	30	13,138	-56.9		291	47.4
150	30	14,107	-60.0		292	40.8
125	29	15,241	-62.1		296	32.4
100	29	16,617	-62.7		302	17.9
80	29	17,996	-60.7		338	7.8
60	29	19,805	-55.6		64	8.9
50	29	20,974	-52.9		77	11.5
40	26	22,420	-51.1		86	15.2
30	26	24,300	-48.8		88	16.9
25	26	25,502	-46.8		85	17.9
20	20	26,986	-44.5		81	19.4
15	19	28,928	-41.1		85	22.5
10	6	31,676	-37.7			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JULY 1960

Standard pressure surface (mb)	PITTSBURGH, PA. (976 MB.)						POINT ARGUELLO, CALIF. (1001 MB.)						PORTLAND, ME. (1012 MB.)						RAPID CITY, S. DAK. (906 MB.)						ST. CLOUD, MINN. (979 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	353	15.6	89	330	0.8	31	113	11.4	95	319	2.9	31	20	17.6	84	272	3.1	31	966	17.4	64	329	2.1	31	316	15.6	91	157	0.6
1,000--	31	147					31	119			327	3.1	31	119	17.7	74	280	4.7	31	111					31	131				
950----	31	585	17.5	72	275	2.3	31	564	18.3	58	353	5.4	31	555	16.8	63	291	7.6	31	553					31	578	18.7	71	253	4.3
900----	31	1,046	15.2	70	291	6.0	31	1,022	24.2	27	28	3.9	31	1,017	13.9	62	284	8.9	31	1,025	18.6	60	327	2.1	31	1,033	16.8	63	279	7.0
850----	31	1,529	12.2	70	285	8.9	31	1,520	22.5	26	29	3.1	31	1,497	11.2	57	276	9.9	31	1,519	20.5	45	298	6.0	31	1,518	14.1	59	293	8.5
800----	31	2,035	9.6	60	284	12.4	31	2,043	19.3	28	56	1.4	31	2,001	8.3	51	274	12.6	31	2,041	18.0	41	293	7.2	31	2,027	10.9	57	297	11.3
750----	31	2,568	7.4	45	285	15.0	31	2,590	15.2	30	145	.8	31	2,524	5.5	46	270	15.3	31	2,586	13.9	42	303	8.5	31	2,564	8.0	50	304	15.2
700----	31	3,135	5.0	37	279	17.7	31	3,173	11.1	31	210	3.1	31	3,093	2.6	43	271	17.3	31	3,168	9.4	45	303	9.9	31	3,129	4.9	44	305	17.1
650----	31	3,731	1.5	36	276	19.8	31	3,780	6.4	37	192	3.9	31	3,680	- .4	38	275	17.9	31	3,774	4.5	46	297	11.9	31	3,726	1.0	44	306	20.4
600----	31	4,378	- 1.9	31	281	22.2	31	4,437	1.5	38	198	6.8	31	4,325	- 3.8	35	270	23.3	31	4,425	- .3	49	292	13.6	31	4,369	- 2.7	37	305	22.2
550----	31	5,056	- 5.8		281	22.9	31	5,121	- 3.5	37	190	8.0	31	4,994	- 7.6		268	26.6	31	5,108	- 5.3	48	289	15.9	31	5,045	- 7.1	34	304	23.3
500----	31	5,808	-10.4		282	25.1	31	5,878	- 8.6		191	9.5	31	5,745	-12.3		267	28.6	31	5,858	-10.4	44	286	18.3	31	5,791	-11.9		304	25.5
450----	31	6,606	-15.6		285	27.8	31	6,680	-14.3		204	9.5	31	6,528	-17.7		264	28.8	31	6,660	-15.7	40	291	20.4	31	6,583	-17.3		307	28.0
400----	31	7,492	-21.7		281	28.2	31	7,569	-20.7		213	11.1	31	7,414	-23.8		264	30.3	31	7,542	-21.8		290	21.8	31	7,463	-23.5		307	33.6
350----	31	8,463	-28.5		285	34.8	31	8,543	-27.9		224	13.6	31	8,377	-30.9		264	37.5	31	8,511	-29.0		289	25.1	31	8,426	-30.7		308	34.6
300----	31	9,550	-36.6		283	34.0	31	9,634	-35.4		231	15.9	31	9,453	-38.7		260	41.4	31	9,594	-37.3		288	31.5	31	9,503	-38.7		306	40.6
250----	31	10,791	-45.5		281	35.4	31	10,882	-43.8		235	19.4	31	10,682	-47.1		261	45.1	31	10,830	-46.0		288	36.9	31	10,732	-47.1		301	44.7
200----	31	12,248	-54.3		279	40.0	31	12,351	-52.9		231	22.0	31	12,137	-53.3		264	48.8	31	12,287	-54.0		282	42.4	31	12,185	-53.8		299	46.2
175----	30	13,097	-56.8		281	40.4	31	13,203	-57.9		231	21.4	31	12,993	-54.9		264	43.3	31	13,138	-57.0		283	39.1	31	13,041	-54.8		297	46.6
150----	30	14,070	-58.8		282	37.1	31	14,164	-63.1		229	18.5	31	13,977	-56.1		265	40.2	31	14,107	-59.2		284	31.5	31	14,023	-56.5		301	42.6
125----	30	15,211	-60.5		287	29.9	31	15,275	-66.7		226	12.6	31	15,133	-57.1		266	33.4	31	15,241	-61.4		288	24.1	31	15,176	-58.0		303	33.8
100----	30	16,597	-60.9		299	17.5	30	16,619	-67.1		170	3.7	31	16,547	-57.0		266	20.4	31	16,620	-62.3		298	11.9	31	16,578	-59.1		306	21.8
80-----	29	17,989	-59.1		335	9.3	30	17,970	-65.2		101	11.3	30	17,963	-55.3		261	6.4	31	18,004	-60.4		349	6.2	31	17,979	-57.6		327	11.1
60-----	29	19,808	-55.0		65	10.5	28	19,740	-59.6		99	16.3	30	19,809	-52.7		111	2.9	31	19,815	-56.0		65	8.2	31	19,807	-54.3		36	8.2
50-----	28	20,981	-52.6		87	14.4	28	20,888	-56.8		95	17.9	29	20,992	-51.1		98	5.6	31	20,982	-53.3		69	10.7	31	20,980	-52.4		68	9.3
40-----	28	22,430	-50.6		95	16.3	28	22,309	-54.1		91	20.8	27	22,447	-49.5		90	9.5	30	22,426	-50.7		78	13.8	31	22,429	-50.2		79	13.4
30-----	28	24,316	-48.2		86	16.7	27	24,167	-51.0		88	24.7	25	24,338	-47.6		85	12.6	29	24,308	-48.6		87	16.1	29	24,320	-47.5		88	16.5
25-----	28	25,521	-46.5		83	20.4	27	25,357	-49.4		88	27.8	20	25,548	-46.1		89	14.2	29	25,511	-47.1		86	16.9	28	25,527	-45.8		90	18.5
20-----	25	27,005	-44.4		87	24.1	26	26,823	-46.9		89	27.8	13	27,022	-43.7		78	16.5	28	26,996	-44.5		87	20.2	24	27,017	-43.4		90	22.2
15-----	24	28,942	-41.1		89	29.9	21	28,745	-43.7		91	30.3	8	28,941	-40.0				21	28,928	-40.4		83	23.3	13	28,974	-39.8			
10-----	21	31,725	-35.8		91	37.9	14	31,506	-37.6		86	36.3							6	31,674	-35.0									
7------	8	34,255	-32.0				6	33,948	-34.5																					

Standard pressure surface (mb)	ST. PAUL IS., ALASKA (1012 MB.)						SALEM, OREG. (1011 MB.)						SALT LAKE CITY, UTAH (873 MB.)						SAN ANTONIO, TEX. (987 MB.)						SAN DIEGO, CALIF. (998 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	6.5	97	213	1.9	31	61	10.8	81	360	1.7	31	1,288	20.2	40	158	6.0	31	243	23.9	90	166	2.7	31	124	17.3	94	340	2.7
1,000--	31	109	7.0	94	220	2.3	31	155	14.2	70	353	3.1	31	91					31	130					31	105			345	3.5
950----	31	531	7.8	86	236	6.2	31	590	14.8	60	21	12.4	31	536					31	579	22.9	85	186	9.7	31	547	22.2	54	344	2.1
900----	31	978	7.5	77	241	6.2	31	1,048	15.5	48	15	8.7	31	1,013					31	1,052	21.7	71	194	15.3	31	1,020	25.1	30	329	3.3
850----	31	1,448	5.8	75	236	6.8	31	1,531	14.5	39	358	3.1	31	1,518	24.3	28	149	7.6	31	1,547	19.4	63	185	12.8	31	1,521	23.3	29	305	3.5
800----	31	1,943	3.5	73	243	5.6	31	2,042	12.6	28	291	2.9	31	2,046	22.0	24	161	5.4	31	2,067	16.5	59	176	8.7	31	2,047	20.5	28	288	3.1
750----	31	2,461	1.3	66	248	5.6	31	2,578	10.0	27	244	5.6	31	2,598	18.0	26	185	4.1	31	2,610	13.5	51	160	6.4	31	2,594	16.5	32	235	3.1
700----	31	3,018	- 1.4	65	249	5.4	31	3,151	6.7	28	230	9.7	31	3,188	13.5	30	224	5.1	31	3,193	9.9	49	154	5.2	31	3,184	12.0	36	198	4.1
650----	31	3,602	- 4.2	58	247	5.4	31	3,749	2.6	29	225	12.0	31	3,800	7.9	35	234	5.6	31	3,798	6.2	47	121	3.7	31	3,794	7.4	38	180	5.1
600----	31	4,233	- 7.7	55	259	7.2	31	4,397	- 1.5		226	15.2	31	4,462	2.1	42	244	8.4	31	4,458	2.2	43	110	4.1	31	4,455	2.7	38	170	6.0
550----	31	4,899	-11.4	51	260	8.2	31	5,078	- 6.3		228	18.1	31	5,145	- 3.9	48	248	11.1	31	5,150	- 1.8	38	113	3.3	31	5,141	- 2.3	36	159	8.0
500----	31	5,630	-16.0	46	266	9.5	31	5,822	-11.2		229	18.5	31	5,901	-10.0	50	246	13.6	31	5,909	- 6.2	36	95	2.7	31	5,905	- 7.9	37	157	7.4
450----	31	6,409	-21.2	43	275	8.9	31	6,616	-17.1		231	19.8	31	6,695	-15.6	43	247	15.0	31	6,721	-11.2	31	97	3.7	31	6,705	-13.6	34	170	7.6
400----	30	7,268	-27.5	44	267	10.3	31	7,495	-23.6		232	22.2	31	7,585	-21.8	37	248	15.5	31	7,622	-17.1	30	71	4.1	31	7,603	-19.9		193	9.3
350----	30	8,215	-34.6		268	10.3	31	8,457	-31.1		232	24.5	31	8,555	-28.7		247	16.9	31	8,610	-24.1		62	4.1	31	8,582	-26.2		210	10.9
300----	30	9,273	-42.8		274	11.7	31	9,531	-39.3		231	28.6	31	9,642	-36.6		245	22.0	31	9,717	-32.3		69	4.9	31	9,681	-33.8		213	12.8
250----	30	10,481	-49.9		273	12.4	31	10,756	-47.9		228	34.6	31	10,884	-45.0		244	29.7	31	10,977	-42.2		63	3.9	31	10,936	-42.4		213	16.3
200----	30	11,932	-51.5		284	15.5	31	12,204	-54.5		231	40.0	31	12,346	-53.9		248	32.8	30	12,451	-53.6		38	3.7	31	12,414	-52.0		218	17.9
175----	29	12,799	-50.5		282	11.9	31	13,057	-55.4		232	40.4	31	13,196	-57.6		249	29.0	30	13,298	-59.6		26	3.7	31	13,269	-57.4		219	16.3
150----	28	13,794	-50.0		289	8.9	31	14,037	-56.8		236	35.4	31	14,161	-61.4		252	22.0	30	14,250	-65.2		87	4.1	31	14,230	-63.5		225	14.0
125----	28	14,984	-50.5		292	6.2	30	15,184	-58.5		232	26.6	31	15,284	-64.4		261	15.5	29	15,345	-69.8		81	4.7	31	15,336	-68.3		218	8.9
100----	28	16,440	-50.1		313	4.7	30	16,582	-59.5		225	18.3	31	16,646	-65.1		246	5.1	29	16,667	-70.9		72	12.8	31	16,670	-69.4		116	5.8
80-----	26	17,895	-49.3		50	2.7	30	17,981	-58.2		208	8.0	30	18,013	-62.4		80	3.3	29	17,999	-66.9		85	18.5	31	18,008	-66.8		89	12.6
60-----	26	19,782	-48.6		75	5.2	30	19,804	-55.2		112	6.6	30	19,809	-57.5		91	10.3	29	19,763	-60.1		85	24.1	31	19,769	-61.1		96	18.1
50-----	26	20,981	-48.2		94	8.2	30	20,974	-53.2		93	9.1	29	20,967	-54.8		87	13.2	29	20,908	-57.0		88	31.3	31	20,910	-57.7		92	21.4
40-----	25	22,452	-47.8		90	9.7	30	22,419	-50.8		85	13.0	29	22,403	-51.9		85	14.0	29	22,332	-53.2		92	39.1	31	22,328	-54.7		94	24.3
30-----	23	24,356	-46.6		88	14.0	28	24,298	-48.7		85	15.2	28	24,275	-49.6		84	18.7	29	24,198	-49.8		90	37.5	29	24,179	-51.8		86	29.1
25-----	19	25,572	-45.3		95	13.0	26	25,500	-46.7		82	19.8	27	25,473	-47.8		84	21.0	26	25,393	-48.6		86	38.5	28	25,367	-50.4		88	32.3
20-----	19	27,069	-43.3		87	14.6	24	26,987	-44.3		84	19.8	26	26,954	-44.9		86	23.3	24	26,865	-46.4		86	43.7	28	26,831	-48.0		91	33.6
15-----	13	29,009	-40.8		96	21.6	21	28,934	-40.1		86	22.7	19	28,884	-41.8		90	23.9	20	28,786	-44.0		88	47.4	24	28,739	-45.3		88	34.4
10-----																			7	31,510	-40.5				19	31,464	-41.3		89	35.4
7------																									13	33,901	-38.1			
5------																									5	36,247	-34.9			

Standard pressure surface (mb)	SAN JUAN, P. R. (1017 MB.)						SANTA MONICA, CALIF. (1009 MB.)						SAULT STE. MARIE, MICH. (989 MB.)						SEATTLE, WASH. (1004 MB.)						SHEMYA, ALASKA (1007 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	25.3	83	116	6.2	31	38	17.1	87		0.0	31	221	12.3	93	311	1.4	31	125	13.5	81	73	1.0	31	37	7.4	97	204	4.5
1,000--	31	151	24.7	81	104	13.4	31	111	16.8	83	85	.6	31	124					31	160	13.7	78	62	1.7	31	99			190	6.2
950----	31	598	22.1	79	97	18.5	31	556	22.0	46	87	2.5	31	555	15.2	73	290	6.0	31	596	15.1	63	28	3.7	31	521	8.7	91	230	10.5
900----	31	1,069	19.3	78	98	19.2	31	1,024	24.3	25	252	.6	31	1,015	13.5	65	299	10.5	31	1,052	14.1	55	360	4.9	31	970	8.3	87	231	10.1
850----	31	1,560	16.5	74	99	18.1	31	1,522	22.4	23	270	3.5	31	1,494	10.4	69	295	14.4	31	1,533	12.4	52	337	3.9	31	1,442	7.1	78	232	10.9
800----	31	2,075	14.3	62	101	18.3	31	2,047	19.5	25	264	4.1	31	1,997	7.4	67	298	15.9	31	2,040	10.6	41	294	4.1	31	1,940	5.7	72	239	10.9
750----	31	2,610	11.2	53	106	16.7	31	2,591	15.7	28	230	4.3	31	2,527	5.0	53	300	18.1	31	2,572	8.6	30	259	6.8	31	2,470	3.3	69	241	11.5
700----	31	3,192	7.5	52	106	15.2	31	3,180	11.4	31	215	5.6	31	3,088	2.5	49	298	20.0	31	3,143	5.3	31	242	9.1	31	3,025	.7	60	252	10.5
650----	30	3,793	3.8	48	107	12.4	31	3,788	6.8	35	192	6.4	31	3,678	- 1.1	51	297	21.4	31	3,738	1.5	31	235	12.0	31	3,614	- 2.3	54	262	12.8
600----	30	4,444	.1	45	98	11.7	31	4,448	1.9	36	188	8.2	31	4,319	- 4.7	53	293	24.5	31	4,384	- 2.8	31	234	14.8	31	4,250	- 5.5	54	266	16.7
550----	30	5,123	- 3.3	39	96	11.5	31	5,135	- 3.1	32	186	9.5	31	4,993	- 8.8	44	296	26.8	31	5,059	- 7.2	26	226	18.5	31	4,921	- 9.3	53	264	17.9
500----	30	5,885	- 7.8	34	99	8.4	31	5,893	- 8.5		186	11.7	31	5,732	-13.5	41	297	28.4	31	5,804	-12.3		231	19.0	31	5,659	-13.8	52	266	22.9
450----	30	6,687	-12.9	34	85	5.1	31	6,695	-14.4		194	9.9	31	6,522	-19.1	37	294	28.8	31	6,592	-18.0		232	21.8	31	6,448	-18.8	50	271	26.2
400----	30	7,584	-19.1	35	92	3.3	31	7,587	-20.5		214	10.1	31	7,394	-25.2	38	294	31.3	31	7,471	-24.6		232	25.6	31	7,321	-25.0	47	270	26.6
350----	30	8,563	-26.3		151	2.7	31	8,562	-27.1		221	11.7	31	8,349	-32.8	38	293	33.6	31	8,430	-31.9		231	28.4	31	8,277	-32.0	45	275	31.9
300----	30	9,658	-34.9		250	1.7	31	9,656	-34.6		217	14.4	31	9,416	-40.8		292	37.3	31	9,501	-40.2		233	31.3	31	9,348	-40.0		280	36.5
250----	30	10,903	-45.0		263	7.6	31	10,907	-43.1		221	16.3	31	10,633	-49.3		292	44.1	31	10,722	-48.7		235	38.1	28	10,562	-49.0		285	42.0
200----	30	12,355	-56.9		253	9.7	31	12,380	-52.5		222	17.1	31	12,080	-53.3		297	48.4	31	12,167	-54.5		236	41.2	28	12,010	-52.5		285	38.3
175----	29	13,188	-62.4		247	8.7	31	13,233	-57.8		224	16.9	31	12,939	-53.4		295	43.1	31	13,022	-54.5		238	40.0	28	12,873	-52.6		284	35.9
150----	29	14,129	-66.9		265	2.5	31	14,192	-63.3		230	15.2	30	13,922	-54.3		294	36.5	31	14,009	-55.1		236	35.8	28	13,870	-52.4		283	28.2
125----	29	15,221	-70.2		92	2.9	31	15,300	-67.5		222	10.1	30	15,088	-55.2		296	29.9	31	15,169	-56.4		234	26.0	28	15,046	-53.3		284	20.0
100----	28	16,538	-71.7		82	15.0	31	16,639	-68.4		134	3.1	29	16,512	-56.1		298	20.4	31	16,583	-57.7		227	18.3	28	16,482	-53.4		287	13.0
80-----	24	17,863	-68.2		83	27.6	31	17,986	-65.2		100	10.9	29	17,933	-55.2		306	12.4	31	17,994	-56.4		212	7.8	28	17,922	-52.3		294	4.7
60-----	22	19,605	-63.6		93	39.1	29	19,758	-59.5		96	15.7	28	19,781	-53.0		360	4.7	31	19,830	-53.8		110	4.5	27	19,792	-51.2		150	1.6
50-----	22	20,733	-60.3		94	41.6	27	20,909	-55.9		89	18.1	25	20,958	-51.7		62	6.0	30	21,008	-52.0		91	7.8	27	20,980	-50.5		83	5.2
40-----	21	22,137	-56.3		93	47.0	24	22,334	-53.4		93	23.3	22	22,415	-49.9		73	8.7	28	22,458	-50.1		85	11.7	26	22,439	-49.5		79	6.6
30-----	20	23,984	-51.5		91	48.8	23	24,195	-51.0		87	26.2	19	24,299	-47.8		85	14.8	25	24,343	-47.6		86	15.2	24	24,332	-48.5		97	8.7
25-----	19	25,176	-48.9		89	51.1	23	25,385	-49.0		89	28.4	18	25,505	-46.3		87	17.3	23	25,555	-45.6		88	17.3	19	25,542	-47.4		92	10.7
20-----	17	26,649	-46.0		89	51.3	23	26,857	-46.9		88	30.5	16	26,996	-44.0		88	18.3	19	27,053	-42.8		84	19.8	15	27,024	-45.5		95	15.5
15-----	11	28,570	-43.3		93	60.0	16	28,784	-44.2		87	31.3	5	28,919	-41.9				15	28,994	-39.7		84	21.6	8	28,985	-43.0			
10-----							5	31,535	-39.2																					

See reference note at end of table

RAWINSONDE DATA

Average monthly values

SHREVEPORT, LA.
(1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	76	23.1	86	210	1.2
1,000--	31	138	23.5	83	213	2.3
950----	31	588	23.6	71	228	6.0
900----	31	1,061	21.0	70	227	7.2
850----	31	1,555	18.2	65	240	7.6
800----	31	2,072	15.1	60	249	6.2
750----	31	2,612	11.7	57	259	6.0
700----	31	3,190	8.0	55	256	6.0
650----	31	3,794	4.3	48	270	5.2
600----	31	4,446	.7	43	277	5.6
550----	31	5,132	- 2.8	37	279	5.2
500----	31	5,890	- 7.2	32	287	6.0
450----	31	6,697	-12.5	36	297	6.2
400----	31	7,595	-18.1		317	6.6
350----	31	8,580	-24.7		307	7.8
300----	31	9,684	-32.7		303	7.6
250----	31	10,942	-42.5		300	7.8
200----	31	12,413	-53.8		284	6.8
175----	31	13,259	-59.9		282	7.0
150----	31	14,208	-65.9		285	7.0
125----	31	15,302	-70.0		333	3.5
100----	31	16,628	-69.9		59	5.8
80-----	31	17,968	-66.2		79	12.6
60-----	31	19,735	-60.2		85	20.6
50-----	31	20,883	-55.8		89	23.3
40-----	31	22,314	-52.7		91	25.1
30-----	30	24,182	-50.1		87	27.2
25-----	28	25,372	-48.4		85	29.1
20-----	25	26,844	-46.1		87	30.3
15-----	19	28,769	-42.8		86	27.0
10-----	5	31,540	-38.1			

SPOKANE, WASH.
(932 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	722	16.5	44	156	3.9
1,000--	31	115				
950----	31	560				
900----	31	1,025	21.9	32	176	2.5
850----	31	1,520	19.7	27	230	4.9
800----	31	2,038	15.5	32	232	5.6
750----	31	2,575	11.0	40	239	7.0
700----	31	3,152	6.8	39	245	10.3
650----	31	3,750	2.8	34	240	14.4
600----	31	4,399	- 1.5		241	18.8
550----	31	5,078	- 6.2		241	21.4
500----	31	5,825	-11.4		240	22.5
450----	31	6,617	-17.0		247	22.5
400----	31	7,498	-23.7		247	25.3
350----	31	8,462	-30.8		247	28.6
300----	31	9,535	-39.2		246	32.1
250----	31	10,761	-47.6		248	39.2
200----	31	12,212	-54.0		250	41.4
175----	31	13,068	-54.5		249	39.8
150----	31	14,054	-55.5		247	34.0
125----	31	15,209	-57.6		246	28.8
100----	31	16,616	-58.0		247	16.1
80-----	31	18,024	-57.0		236	6.8
60-----	31	19,860	-53.0		94	5.4
50-----	31	21,040	-51.4		80	9.7
40-----	29	22,495	-50.0		85	13.6
30-----	22	24,374	-47.7		87	15.9
25-----	22	25,583	-45.9		87	19.8
20-----	20	27,075	-43.5		86	20.4
15-----	15	29,023	-39.5		87	22.3
10-----						

SWAN ISLAND, W. I.
(1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	10	26.6	87	83	6.8
1,000--	30	119	25.9	86	85	10.3
950----	30	572	22.7	84	98	15.7
900----	30	1,040	19.9	78	106	18.8
850----	30	1,532	17.0	72	109	19.0
800----	30	2,047	14.3	65	109	17.5
750----	30	2,589	11.4	56	111	17.7
700----	30	3,165	8.3	54	112	16.7
650----	30	3,772	4.8	53	112	15.3
600----	30	4,422	.9	53	111	14.6
550----	30	5,106	- 3.0	48	115	11.7
500----	30	5,865	- 7.5	47	115	9.9
450----	30	6,672	-12.3	46	102	9.9
400----	30	7,569	-18.0	42	100	8.5
350----	30	8,553	-25.0	39	76	8.0
300----	30	9,655	-33.3	38	44	8.5
250----	30	10,909	-43.4		36	7.0
200----	29	12,371	-55.4		27	5.2
175----	29	13,210	-61.7		16	6.4
150----	29	14,150	-67.8		45	9.9
125----	29	15,233	-72.3		61	15.0
100----	26	16,548	-71.9		80	21.0
80-----	24	17,867	-69.3		88	27.8
60-----	23	19,607	-64.1		86	36.3
50-----	22	20,731	-61.8		89	45.5
40-----	21	22,126	-57.5		93	53.0
30-----	21	23,964	-52.3		98	56.0
25-----	20	25,152	-48.8		94	55.6
20-----	16	26,613	-46.6		90	58.3
15-----	13	28,515	-43.5			
10-----						

TAMPA, FLA.
(1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	25.3	90	137	3.9
1,000--	31	141	25.6	84	166	4.5
950----	31	590	23.7	81	220	7.6
900----	31	1,066	20.7	80	232	6.8
850----	31	1,559	17.9	77	225	7.8
800----	31	2,077	14.9	75	222	7.4
750----	31	2,618	11.9	73	214	5.8
700----	30	3,197	8.7	67	211	5.8
650----	30	3,803	5.3	64	225	5.6
600----	30	4,459	1.6	63	244	4.5
550----	30	5,150	- 2.0	56	267	7.2
500----	30	5,910	- 6.2	48	263	1.6
450----	30	6,726	-11.1	44	259	1.7
400----	30	7,626	-16.9	39	339	2.3
350----	29	8,616	-23.8	38	16	1.9
300----	29	9,726	-31.7		345	2.9
250----	28	10,990	-41.6		24	5.6
200----	27	12,465	-53.6		30	10.1
175----	27	13,312	-60.1		39	12.2
150----	27	14,261	-66.0		45	14.6
125----	27	15,357	-70.0		56	15.7
100----	27	16,683	-69.8		69	16.3
80-----	26	18,021	-66.2		81	16.9
60-----	24	19,786	-59.5		85	30.9
50-----	24	20,935	-56.5		96	33.6
40-----	22	22,359	-53.0		97	35.6
30-----	22	24,233	-48.6		93	34.4
25-----	19	25,437	-47.2		89	34.2
20-----	17	26,914	-45.2		83	40.6
15-----	11	28,860	-41.3			
10-----						

TATOOSH IS., WASH.
(1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	31	11.5	93	226	8.0
1,000--	31	159	11.6	87	237	7.8
950----	31	588	13.8	69	289	7.0
900----	31	1,045	13.1	55	278	5.2
850----	31	1,524	11.7	44	259	4.3
800----	31	2,029	9.4	37	259	9.9
750----	31	2,560	6.7	37	243	8.4
700----	31	3,126	3.4	37	247	11.9
650----	31	3,715	- .2	40	245	15.7
600----	31	4,359	- 4.1	42	240	18.3
550----	31	5,029	- 8.7	42	239	19.6
500----	31	5,766	-13.7	39	238	22.9
450----	31	6,554	-19.4	38	239	26.6
400----	31	7,430	-25.7	35	240	29.7
350----	31	8,385	-32.9		239	32.3
300----	31	9,451	-41.1		236	36.9
250----	31	10,666	-49.8		234	39.6
200----	31	12,106	-54.8		238	42.9
175----	31	12,961	-54.1		239	41.4
150----	31	13,949	-54.5		239	34.8
125----	31	15,115	-55.5		236	28.2
100----	31	16,536	-56.2		238	16.3
80-----	30	17,955	-55.4		219	8.5
60-----	29	19,797	-53.4		110	5.6
50-----	28	20,977	-51.9		98	6.0
40-----	27	22,428	-50.3		86	9.9
30-----	25	24,311	-47.9		85	11.5
25-----	23	25,523	-45.9		85	16.1
20-----	18	27,011	-43.6		86	18.5
15-----	14	28,977	-39.5			
10-----	6	31,774	-33.7			

TOPEKA, KANS.
(985 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	269	18.9	94	60	1.9
1,000--	31	136				
950----	31	580	21.0	71	134	3.1
900----	31	1,048	18.9	66	192	2.1
850----	31	1,537	16.2	63	259	3.1
800----	31	2,050	13.3	56	315	3.9
750----	31	2,590	10.4	55	325	5.8
700----	31	3,163	7.2	52	328	6.2
650----	31	3,768	3.8	48	323	8.0
600----	31	4,416	.2	46	315	10.5
550----	31	5,100	- 4.0	44	308	13.0
500----	31	5,855	- 8.5		314	13.8
450----	31	6,661	-13.7		306	14.4
400----	31	7,551	-20.0		305	17.5
350----	31	8,528	-26.6		305	20.2
300----	31	9,623	-34.8		298	27.0
250----	31	10,871	-44.3		288	31.3
200----	31	12,336	-53.9		284	36.7
175----	31	13,184	-58.7		285	35.2
150----	31	14,144	-62.4		294	22.9
125----	31	15,262	-65.3		297	18.3
100----	31	16,618	-65.7		324	8.9
80-----	31	17,982	-63.6		27	6.0
60-----	31	19,775	-57.5		72	11.7
50-----	31	20,936	-54.2		87	15.3
40-----	29	22,374	-51.7		88	16.1
30-----	26	24,244	-50.2		87	18.8
25-----	23	25,440	-48.4		86	19.6
20-----	19	26,913	-45.3		83	23.9
15-----	13	28,857	-41.2			
10-----						
7------						

TUCSON, ARIZ.
(924 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	781	24.7	51	143	7.0
1,000--	31	86				
950----	31	535				
900----	31	1,020	26.6	40	147	5.8
850----	31	1,523	24.0	39	114	2.1
800----	31	2,051	20.4	41	69	2.7
750----	31	2,596	16.4	46	41	2.9
700----	31	3,188	11.9	50	46	3.9
650----	31	3,795	7.1	57	63	4.9
600----	31	4,458	2.0	60	75	7.8
550----	31	5,148	- 2.7	56	71	8.2
500----	31	5,906	- 7.5	50	83	8.9
450----	31	6,713	-12.5	41	103	4.9
400----	31	7,612	-18.2	31	166	4.3
350----	31	8,595	-25.2		186	5.8
300----	31	9,698	-32.8		198	9.9
250----	31	10,956	-42.3		200	12.8
200----	31	12,427	-53.7		217	15.5
175----	31	13,274	-59.6		237	15.0
150----	30	14,225	-65.2		251	8.5
125----	30	15,322	-69.4		236	.8
100----	30	16,649	-70.3		91	4.5
80-----	30	17,985	-67.1		78	14.0
60-----	30	19,751	-60.3		87	22.2
50-----	30	20,896	-56.8		92	24.7
40-----	28	22,320	-54.2		90	26.8
30-----	28	24,178	-51.0		85	31.5
25-----	28	25,368	-49.4		84	32.3
20-----	28	26,839	-46.7		86	34.2
15-----	25	28,760	-43.1		85	33.8
10-----						
7------						

WASHINGTON, D. C.
(1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	88	20.3	82	249	1.4
1,000--	31	135	20.5	78	235	1.9
950----	31	575	19.4	68	285	4.5
900----	31	1,043	16.7	69	296	5.8
850----	31	1,528	13.5	73	294	8.2
800----	31	2,037	10.6	68	282	12.4
750----	31	2,571	8.2	55	283	13.6
700----	31	3,141	5.6	47	280	15.5
650----	31	3,740	2.5	41	277	17.1
600----	31	4,388	- 1.0	42	273	18.5
550----	31	5,069	- 4.9		274	21.2
500----	31	5,822	- 9.3		273	23.1
450----	31	6,623	-14.5		271	26.0
400----	31	7,512	-20.6		273	28.4
350----	31	8,486	-27.6		273	30.9
300----	31	9,578	-35.4		274	35.6
250----	31	10,824	-44.4		271	39.6
200----	31	12,286	-54.1		274	45.9
175----	31	13,135	-58.1		275	45.7
150----	30	14,102	-60.9		276	37.5
125----	30	15,229	-62.5		278	26.6
100----	30	16,605	-62.9		281	16.5
80-----	30	17,988	-60.2		300	5.4
60-----	30	19,800	-55.9		94	7.8
50-----	30	20,968	-53.5		87	13.8
40-----	30	22,412	-51.1		90	17.3
30-----	27	24,294	-48.3		88	17.9
25-----	26	25,495	-46.7		87	20.2
20-----	24	26,981	-44.1		86	22.3
15-----	16	28,945	-40.2		87	26.8
10-----						
7------						

WINNEMUCCA, NEV.
(871 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,310	15.7	34	113	1.4
1,000--	31	110				
950----	31	556				
900----	31	1,026				
850----	31	1,520	22.7	23	75	1.7
800----	31	2,046	20.7	22	302	1.7
750----	31	2,594	16.7	23	286	1.4
700----	31	3,183	12.3	26	226	3.7
650----	31	3,790	7.2	32	213	8.2
600----	31	4,450	1.7	41	214	12.6
550----	31	5,136	- 3.9	45	212	16.5
500----	31	5,888	- 9.9	46	215	16.1
450----	31	6,686	-15.6	42	220	16.9
400----	31	7,571	-21.8	40	221	16.9
350----	31	8,541	-28.9		228	19.6
300----	31	9,626	-36.9		229	22.2
250----	31	10,866	-45.1		233	26.2
200----	31	12,329	-52.8		234	31.9
175----	31	13,185	-56.0		241	31.9
150----	31	14,157	-59.8		240	24.5
125----	30	15,287	-63.1		242	18.8
100----	30	16,656	-63.9		222	6.0
80-----	30	18,027	-62.4		164	5.1
60-----	29	19,819	-58.1		99	9.3
50-----	29	20,974	-55.7		90	11.3
40-----	29	22,403	-53.5		93	13.2
30-----	26	24,260	-51.1		87	15.5
25-----	25	25,452	-49.5		86	17.9
20-----	24	26,914	-47.8		85	20.2
15-----	22	28,829	-45.2		89	23.5
10-----	16	31,564	-41.0		97	28.4
7------	6	34,035	-38.4			

YAKUTAT, ALASKA
(1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	12	10.2	94	99	2.7
1,000--	29	151	10.9	88	124	2.3
950----	29	580	8.9	84	164	3.3
900----	29	1,025	6.5	83	149	3.5
850----	29	1,493	4.0	83	154	4.1
800----	29	1,985	1.6	81	162	3.1
750----	29	2,499	- 1.4	79	181	1.7
700----	29	3,051	- 4.2	73	173	1.9
650----	29	3,630	- 7.6	69	205	3.9
600----	29	4,253	-11.2	60	207	6.4
550----	29	4,915	-15.0	54	214	7.2
500----	29	5,633	-19.5	50	212	7.6
450----	29	6,404	-25.0	44	226	9.7
400----	29	7,256	-31.2	45	221	8.0
350----	29	8,189	-38.3		219	10.1
300----	29	9,232	-46.1		219	11.3
250----	28	10,438	-50.2		243	19.4
200----	27	11,890	-49.4		271	19.2
175----	27	12,769	-48.0		261	18.5
150----	27	13,786	-47.8		252	17.7
125----	27	14,989	-47.7		255	14.0
100----	26	16,466	-47.8		257	9.3
80-----	25	17,939	-47.7		283	4.1
60-----	25	19,837	-47.8		220	1.4
50-----	25	21,040	-47.6		39	.8
40-----	24	22,514	-47.4		78	5.1
30-----	23	24,419	-46.2		86	8.0
25-----	22	25,634	-44.7		89	8.9
20-----	20	27,125	-43.1		80	14.4
15-----	19	29,090	-40.8		89	15.5
10-----	5	31,844	-38.8			
7------						

Note: All observations scheduled at 1200, G. C. T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant wind speed is biased toward a lower value as the number of observations on which the resultant is based lessens. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. JULY 1960

BLUE HILL OBS., MASS.

Date	Sun's zenith distance								
	A. M.					P. M.			
	78.7°	75.7°	70.7°	60.0°	*	60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.89	3.92	29.4	1.96	*	1.96	2.94	3.92	4.89
July									
5	0.67	0.83	0.93	1.10	----	----	----	----	----
6	.78	.88	1.00	1.13	----	----	----	----	----
7	.61	.75	.88	1.04	----	----	----	----	----
8	.65	.74	.84	.99	----	----	----	----	----
15	----	----	----	----	1.39	1.12	0.99	0.86	0.71
16	.82	.91	1.02	1.18	1.39	1.14	.98	.81	.70
21	----	----	----	1.20	----	----	----	----	----
24	.71	.78	.89	1.02	----	----	----	----	----
25	.81	.90	1.02	1.17	----	----	----	----	----
Averages	0.72	0.83	0.94	1.10	1.39	1.13	0.99	0.84	0.71

MAUNA LOA OBS., HAWAII ‡

Date	Air mass								
	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
July									
1	1.22	1.30	1.42	1.52	1.62	1.52	1.40	1.32	1.26
2	1.27	1.33	1.42	1.52	1.63	1.49	1.39	1.31	1.24
3	1.26	1.35	1.43	1.53	1.63	1.45	----	----	----
4	1.25	1.32	1.41	1.51	----	----	----	----	----
5	1.23	1.31	1.40	1.52	----	----	----	----	----
6	1.24	1.32	1.41	1.52	----	----	----	----	----
7	1.19	1.26	1.37	1.48	----	----	----	----	----
8	1.22	1.30	1.39	1.50	1.63	1.48	1.38	1.31	1.24
9	1.23	1.30	1.39	1.50	----	----	----	----	----
11	1.27	1.33	1.42	1.53	1.63	----	----	----	----
12	1.25	1.31	1.39	1.50	1.61	----	----	----	----
13	1.24	1.33	1.41	1.51	----	----	----	----	----
14	1.28	1.35	1.43	1.54	1.63	----	----	----	----
15	1.24	1.32	1.42	1.52	1.56	1.39	1.28	1.17	1.10
16	1.26	1.33	1.42	----	----	----	----	----	----
17	1.20	1.29	1.39	1.51	----	----	----	----	----
18	1.23	1.31	1.40	1.50	----	1.48	1.39	1.31	1.23
19	1.25	1.32	1.41	1.53	1.65	1.51	1.42	1.33	1.25
20	1.19	1.28	1.37	1.48	1.62	1.48	1.37	1.29	1.23
21	K 1.15	K 1.25	K 1.34	K 1.45	K 1.58	K 1.45	K 1.35	K 1.27	K 1.19
22	----	----	1.36	1.48	1.61	1.53	1.41	1.37	1.24
23	1.25	1.32	1.42	1.51	1.62	1.47	1.33	1.24	1.16
24	1.24	1.33	1.42	1.52	----	1.48	1.38	1.29	1.23
25	1.26	1.34	1.41	1.49	----	----	----	----	----
26	1.26	1.33	1.41	1.51	----	----	----	----	----
29	1.25	1.31	1.40	1.49	1.57	1.43	----	----	----
30	1.24	1.30	1.38	1.45	1.57	----	----	----	----
31	1.21	1.29	1.38	1.49	1.62	----	----	----	----
Averages	1.24	1.31	1.40	1.50	1.61	1.47	1.37	1.29	1.22

* Values corresponding to true solar noon.
‡ Changed recorder. Site of pyrheliometer moved to 100 feet SSW of observatory building July 22, 1960.
H Haze.
S Slight haze - indeterminable.
M Moderate haze - indeterminable.
I Intense haze - indeterminable.
K Smoke.

TUCSON, ARIZ.

Date	Sun's zenith distance								
	A. M.					P. M.			
	78.7°	75.7°	70.7°	60.0°	*	60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
July									
7	0.68	0.78	0.89	1.06	1.21	----	----	----	----
10	----	----	.99	1.15	----	----	----	----	----
11	.86	.94	1.07	1.20	1.41	1.18	1.03	0.92	0.80
12	.85	.94	1.06	1.17	1.37	1.16	1.02	.89	.81
13	.73	.85	.97	1.10	----	----	----	----	----
14	.62	.73	.88	1.05	----	----	----	----	----
15	.67	.77	.88	1.05	1.29	----	----	----	----
16	.65	.75	.88	1.06	1.27	----	----	----	----
17	.65	.76	.89	1.05	1.30	----	----	----	----
24	.57	.69	.83	1.03	----	----	----	----	----
27	.66	.76	.88	1.06	1.31	1.06	.81	----	----
29	----	----	----	----	----	----	.96	.85	.77
30	.61	.71	----	----	----	----	----	----	----
Averages	0.68	0.79	0.93	1.09	1.31	1.13	0.96	0.89	0.79

OMAHA, NEBR.

Date	Air mass								
	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
July									
1	----	----	----	----	----	----	H 0.24	----	----
11	----	----	----	----	----	I 0.59	I .39	I 0.28	----
13	----	----	----	M 0.71	0.98	----	----	----	----
14	0.43	0.54	0.66	.85	----	----	----	----	----
15	----	----	----	----	----	S .70	S .55	S .44	S 0.29
16	----	----	----	----	M .95	----	----	----	----
20	----	----	----	M .77	----	----	----	----	----
21	----	----	----	I .54	----	----	----	----	----
30	.57	.67	.79	----	1.05	.86	.71	.55	.48
31	M .42	M .57	M .70	M .81	I .97	----	----	----	----
Averages	0.48	0.59	0.72	0.74	0.99	0.72	0.47	0.42	0.39

MADISON, WIS.

Date	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
July									
6	S 0.80	S 0.90	S 1.02	----	----	----	----	----	----
7	S .79	S .88	S 1.00	S 1.15	----	----	----	----	----
14	S .85	S .95	S 1.07	1.22	----	----	----	----	----
21	----	----	----	----	----	----	I 0.48	I 0.40	----
24	----	----	----	S 1.12	S 1.29	S 1.10	S .94	S .83	M 0.74
27	----	----	----	S 1.22	----	----	----	----	----
31	----	1.00	1.09	1.23	1.39	S 1.15	S .99	----	----
Averages	0.81	0.93	1.05	1.19	1.34	1.13	0.80	0.62	0.74

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Albuquerque, N.Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Boise, Idaho	Brownsville, Tex.	Canton Island Pacific Area	Cape Hatteras, N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.
July 2-----	725	479	171	---	---	524	---	446	422	748	678	0	614	713	540	---	604	779
July 3-----	546	679	589	674	591	445	---	715	670	764	578	0	740	473	582	290	588	770
July 4-----	568	669	388	600	646	291	---	156	371	775	633	0	742	499	598	643	384	780
July 5-----	---	500	339	449	735	471	---	300	737	747	699	0	314	353	480	660	694	745
July 6-----	466	692	75	533	740	---	---	591	772	742	671	0	734	576	457	661	654	761
July 7-----	---	655	324	458	696	---	---	346	772	739	666	0	300	700	261	678	691	718
July 8-----	381	560	541	304	690	385	---	199	747	618	690	0	782	625	238	662	506	788
Average-------	537	605	347	503	683	423	---	393	642	733	659	0	604	563	451	599	589	763
July 9-----	725	56	592	470	262	420	---	360	751	705	670	0	584	490	605	618	166	---
July 10-----	669	410	617	327	626	342	---	184	712	685	651	0	599	677	545	365	595	---
July 11-----	788	394	377	---	600	505	---	488	449	746	---	0	281	310	421	641	591	---
July 12-----	784	209	176	---	704	473	---	692	689	582	619	0	748	585	---	570	557	694
July 13-----	695	639	284	---	608	536	---	697	787	697	600	0	670	545	505	122	595	550
July 14-----	776	638	374	---	730	444	---	634	715	653	499	0	718	692	530	399	674	744
July 15-----	769	598	93	---	717	553	---	577	---	718	559	0	563	746	313	574	543	745
Average-------	744	421	359	---	607	467	---	519	684	684	600	0	595	578	487	470	532	683
July 16-----	716	593	57	---	725	540	315	576	697	710	569	0	798	409	268	649	607	735
July 17-----	652	595	586	---	723	524	494	668	555	716	572	0	692	454	550	483	726	740
July 18-----	659	537	586	---	684	565	579	678	670	719	---	0	359	663	564	528	538	697
July 19-----	800	627	520	---	685	273	428	405	714	652	401	0	435	132	254	278	654	738
July 20-----	777	609	239	---	618	560	605	519	713	678	600	0	665	470	413	578	681	756
July 21-----	772	574	470	---	729	545	582	106	609	628	---	0	501	752	506	630	495	734
July 22-----	759	591	421	---	675	471	533	209	577	571	679	0	564	351	423	629	393	738
Average-------	734	589	411	---	691	497	505	452	648	668	564	0	574	462	425	539	585	734
July 23-----	703	538	523	---	659	541	512	104	650	654	665	0	738	416	422	601	421	743
July 24-----	637	590	561	---	657	569	446	230	489	695	599	0	682	493	---	629	328	688
July 25-----	715	287	363	---	618	565	316	191	687	474	---	0	673	704	525	600	315	446
July 26-----	734	607	402	392	345	489	437	192	695	634	540	0	743	685	475	389	704	568
July 27-----	719	499	553	655	530	194	391	210	706	523	546	0	671	512	336	575	641	653
July 28-----	719	592	610	386	599	205	409	282	679	634	636	0	(391)	493	334	590	700	705
July 29-----	---	308	682	479	492	500	503	262	659	554	632	0	185	446	163	448	506	573
Average-------	704	489	528	478	557	438	430	210	652	595	603	0	(583)	536	376	547	516	625
July 30-----	608	603	673	703	362	444	150	411	720	475	630	0	470	363	633	404	581	609
July 31-----	682	611	427	225	318	459	441	264	631	603	597	0	718	581	433	673	686	444
Aug. 1-----	727	574	675	465	---	538	74	409	497	626	634	0	292	632	315	623	716	475
Aug. 2-----	681	470	289	285	424	493	291	335	319	688	508	0	538	330	309	461	666	491
Aug. 3-----	728	534	410	209	321	438	167	243	419	679	675	0	747	629	601	250	455	658
Aug. 4-----	651	545	475	470	431	578	316	156	653	705	654	0	703	(718)	636	217	677	695
Aug. 5-----	713	211	419	678	642	281	238	265	474	679	---	0	716	668	670	591	649	680
Average-------	684	507	481	434	416	462	240	298	530	636	616	0	598	(560)	514	460	633	579

1960	Davis, Calif.	Dodge City, Kans.	El Paso, Tex.	Ely, Nev.	Flaming Gorge, Utah	Ft. Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Lander, Wyo.
July 2-----	655	703	732	787	552	661	625	688	---	695	644	603	736	683	870	736	666	641
July 3-----	741	468	716	649	532	660	608	613	634	667	710	677	558	532	883	318	632	412
July 4-----	735	287	550	434	455	542	617	563	---	820	---	615	468	503	907	528	638	564
July 5-----	720	510	---	622	368	529	616	596	754	667	729	647	620	694	879	359	510	404
July 6-----	724	496	396	600	375	278	611	613	751	643	724	207	444	374	878	707	413	511
July 7-----	707	236	226	566	464	501	602	505	---	764	644	605	380	726	820	564	639	593
July 8-----	707	156	432	590	782	617	553	359	696	824	(724)	622	565	628	894	565	644	717
Average-------	713	408	509	607	504	541	605	562	709	726	(696)	568	539	591	876	540	592	549
July 9-----	757	543	733	509	416	628	534	689	---	785	514	436	573	571	700	480	527	573
July 10-----	776	717	744	827	483	652	587	544	671	383	580	192	354	279	893	559	510	449
July 11-----	747	680	747	822	722	666	625	393	569	767	589	564	689	458	916	515	564	628
July 12-----	745	605	744	806	483	655	625	655	661	789	690	588	654	618	899	664	528	599
July 13-----	730	621	741	814	574	549	607	608	715	756	619	689	729	206	911	352	254	550
July 14-----	740	716	683	837	558	302	608	433	---	718	651	388	567	691	903	64	469	598
July 15-----	747	743	702	798	757	242	616	505	689	755	494	766	577	615	890	773	554	664
Average-------	749	661	728	773	570	528	600	547	661	707	591	518	592	491	873	487	486	580
July 16-----	739	674	733	807	726	511	612	453	558	757	691	649	650	642	877	685	380	694
July 17-----	724	689	719	615	753	523	600	469	657	602	679	627	601	598	889	450	500	765
July 18-----	710	637	590	587	747	409	594	386	696	767	674	606	550	374	877	595	281	770
July 19-----	712	766	652	---	714	610	578	351	695	770	668	552	37[illegible]	599	818	440	383	658
July 20-----	715	658	649	493	618	379	579	559	659	773	601	650	702	631	616	710	467	630
July 21-----	625	513	440	510	502	451	353	602	627	686	629	689	638	667	630	688	593	514
July 22-----	654	539	725	430	450	644	498	407	651	645	---	558	535	604	645	540	604	371
Average-------	697	639	644	574	644	504	545	461	649	714	657	619	578	588	765	587	458	629
July 23-----	710	656	703	484	531	650	564	484	582	608	531	490	667	544	815	367	612	521
July 24-----	544	729	(719)	612	701	436	525	634	689	711	670	577	916	521	773	754	627	644
July 25-----	646	651	630	732	653	632	566	362	709	756	643	469	584	570	807	728	585	724
July 26-----	680	539	679	464	557	644	369	437	---	737	616	416	319	293	665	354	643	569
July 27-----	615	645	741	558	---	615	471	581	609	738	422	170	383	620	660	417	653	436
July 28-----	485	610	728	575	---	523	550	290	597	635	531	506	276	654	830	662	620	497
July 29-----	616	707	705	510	427	631	347	403	567	662	---	115	570	593	742	603	631	695
Average-------	614	648	(701)	562	574	590	485	456	626	692	569	392	531	542	756	555	624	584
July 30-----	575	721	584	398	359	636	432	637	667	598	600	689	624	631	844	297	256	556
July 31-----	650	708	696	485	349	607	579	221	392	448	309	536	655	681	882	688	552	512
Aug. 1-----	698	686	686	745	585	611	612	183	637	624	258	417	622	616	867	661	480	649
Aug. 2-----	704	665	703	730	688	654	596	576	430	757	266	717	503	579	862	168	221	739
Aug. 3-----	694	654	696	734	584	620	591	477	---	743	531	729	638	233	871	122	307	676
Aug. 4-----	678	693	721	750	552	623	586	672	---	619	665	617	641	454	868	543	690	663
Aug. 5-----	672	682	699	757	650	626	588	548	637	533	599	542	379	367	863	505	634	625
Average-------	667	687	684	657	538	625	569	473	553	617	461	607	580	509	865	426	448	631

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Laramie, Wyo.	Las Vegas, Nev.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.	Matanuska, Alaska	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.
July 2-----	606	797	795	724	758	778	350	667	586	794	742	677	715	535	546	486	714	598
July 3-----	491	797	223	732	718	799	864	619	496	794	738	641	714	654	483	511	754	618
July 4-----	727	780	682	536	613	(673)	802	539	568	720	740	560	597	324	702	735	642	409
July 5-----	489	775	858	479	653	(755)	492	575	331	482	725	514	152	600	679	628	536	528
July 6-----	586	780	794	661	713	747	807	532	312	500	713	588	307	717	646	532	769	589
July 7-----	613	700	640	688	647	744	802	511	454	343	706	690	578	729	719	565	702	696
July 8-----	660	699	818	791	671	720	766	202	317	789	729	631	694	633	720	733	313	659
Average-------	596	761	687	659	682	(745)	698	521	438	632	728	614	537	599	642	598	633	586
July 9-----	681	693	555	739	654	742	400	287	558	607	746	656	711	456	611	698	---	367
July 10-----	590	784	374	760	672	723	165	666	658	583	739	639	695	537	662	482	734	180
July 11-----	545	774	600	635	701	722	576	678	700	790	739	381	701	646	642	427	---	517
July 12-----	729	781	704	576	743	758	464	361	687	776	712	601	569	637	656	602	450	694
July 13-----	754	787	575	448	739	768	651	619	547	488	736	464	438	486	378	448	718	544
July 14-----	576	796	504	644	628	761	823	608	158	643	718	639	498	668	64	35	732	626
July 15-----	740	793	676	713	698	738	795	672	178	796	718	635	543	719	661	681	698	683
Average-------	659	773	570	645	691	745	553	556	498	669	730	574	594	593	525	482	666	516
July 16-----	653	768	685	628	681	734	705	640	608	747	721	427	576	673	727	---	540	655
July 17-----	509	762	511	644	585	708	725	551	185	771	721	578	665	513	661	---	612	339
July 18-----	749	694	644	549	608	647	557	495	399	786	718	552	460	479	502	598	694	520
July 19-----	724	733	667	546	616	675	762	652	438	782	699	655	618	532	385	405	700	502
July 20-----	747	596	668	564	568	589	571	659	554	780	720	657	523	---	524	600	695	530
July 21-----	583	564	795	348	568	474	705	583	573	778	720	615	269	554	697	733	689	576
July 22-----	503	670	780	649	658	646	587	389	300	---	729	630	625	429	641	478	704	602
Average-------	638	684	679	561	612	639	659	567	437	774	718	588	534	530	591	563	662	532
July 23-----	462	700	601	367	561	659	688	367	227	783	734	668	565	396	415	458	695	462
July 24-----	713	697	576	666	639	656	741	575	160	782	728	443	625	596	681	689	675	425
July 25-----	728	673	689	704	669	676	311	526	114	399	302	502	342	652	680	671	609	505
July 26-----	695	680	430	610	489	607	573	469	231	677	647	267	673	447	679	665	570	485
July 27-----	599	633	740	698	659	611	636	344	181	---	691	227	616	---	320	---	362	593
July 28-----	611	655	426	664	670	660	741	565	166	725	658	366	614	502	188	481	491	598
July 29-----	700	622	650	652	643	665	555	137	257	772	584	445	601	662	428	313	221	518
Average-------	644	666	587	623	619	648	606	426	191	690	620	417	577	543	484	546	518	512
July 30-----	540	489	569	501	660	709	606	602	198	747	647	257	528	498	123	169	738	483
July 31-----	518	697	581	672	681	700	743	672	193	763	577	368	664	596	634	662	704	660
Aug. 1-----	647	764	688	638	696	700	677	632	109	607	713	638	673	553	661	607	665	536
Aug. 2-----	722	738	629	664	707	717	222	572	386	710	694	671	641	596	274	439	384	584
Aug. 3-----	674	748	489	612	704	711	211	196	482	757	695	618	637	623	474	403	---	542
Aug. 4-----	555	756	186	538	700	703	678	618	206	478	686	442	659	505	360	143	---	483
Aug. 5-----	630	731	638	643	595	682	546	596	144	480	688	460	619	610	146	63	---	497
Average-------	612	703	540	610	678	703	526	555	246	649	672	493	631	569	382	355	623	541

1960	Oklahoma City, Okla.	Page, Ariz.	Portland, Me.	Pullman, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S.Ste. Marie, Mich.	Seattle-Tacoma, Wash.	Shreveport, La.	Spokane, Wash.	State College, Pa.	Tampa, Fla.	Tucson, Ariz.	Washington, D. C. (Obs & Test Dev Ctr)
July 2-----	748	595	509	798	779	776	439	649	653	347	734	680	773	701	735	648	661
July 3-----	696	797	578	788	695	795	756	593	---	697	741	605	778	449	673	295	522
July 4-----	282	793	744	775	773	774	660	548	644	570	731	585	780	655	654	519	631
July 5-----	362	736	592	787	601	755	642	657	662	752	720	588	783	658	670	679	639
July 6-----	235	718	601	773	669	750	712	651	699	820	709	570	767	531	711	745	590
July 7-----	220	685	662	762	718	761	703	641	672	757	722	703	759	569	482	754	558
July 8-----	591	747	716	799	518	757	729	693	652	685	733	666	---	738	605	613	711
Average-------	448	724	629	783	679	767	663	633	664	661	727	628	773	614	647	607	616
July 9-----	692	690	717	784	756	765	355	617	634	683	699	650	---	701	487	437	675
July 10-----	722	776	751	787	643	758	501	646	606	747	522	633	---	207	426	692	---
July 11-----	750	779	704	795	432	775	446	688	663	625	640	---	---	324	613	775	153
July 12-----	740	780	695	767	710	772	657	701	717	728	649	---	743	663	354	775	---
July 13-----	500	753	547	733	612	780	603	650	756	671	548	---	619	303	660	758	584
July 14-----	690	773	109	738	597	763	650	378	765	748	704	529	736	77	530	701	299
July 15-----	766	777	787	750	679	745	723	378	727	585	696	674	---	763	131	742	696
Average-------	695	761	616	765	633	765	562	580	695	684	637	621	---	434	457	697	481
July 16-----	720	777	769	747	605	742	425	425	732	156	695	574	---	741	516	743	670
July 17-----	637	758	652	746	590	744	394	439	755	751	692	460	---	620	629	739	609
July 18-----	---	747	440	764	743	711	700	299	705	399	688	393	---	598	360	554	540
July 19-----	---	746	271	705	741	533	567	465	699	546	702	347	718	580	574	694	324
July 20-----	579	718	518	724	689	486	696	195	---	742	669	460	740	661	576	681	580
July 21-----	264	718	765	746	591	644	685	537	462	124	687	659	747	719	420	543	666
July 22-----	254	657	611	641	509	663	702	554	216	497	348	644	719	671	468	479	646
Average-------	491	732	575	725	638	646	596	416	595	459	640	508	731	656	509	633	576
July 23-----	---	620	587	777	542	643	693	699	672	748	694	693	754	315	483	643	619
July 24-----	---	730	727	763	318	666	570	642	626	745	704	593	757	733	401	747	595
July 25-----	706	729	633	596	644	710	323	592	716	662	671	683	681	723	328	726	535
July 26-----	687	713	697	642	582	617	678	701	703	150	506	661	531	305	439	518	440
July 27-----	689	704	190	672	679	530	694	548	665	730	651	647	683	541	439	724	198
July 28-----	704	643	653	710	527	677	680	627	663	707	657	633	693	540	89	621	518
July 29-----	692	656	602	706	688	648	514	661	553	426	570	637	689	563	85	642	201
Average-------	696	685	584	695	568	642	593	639	657	596	636	649	684	531	323	660	444
July 30-----	690	556	63	187	694	708	740	626	668	667	310	399	251	408	202	720	509
July 31-----	734	547	698	619	615	714	709	672	658	642	438	450	631	695	225	724	460
Aug. 1-----	690	721	704	136	400	737	317	645	705	221	146	619	135	591	554	692	497
Aug. 2-----	706	720	472	721	680	732	658	612	696	588	312	584	708	583	461	705	628
Aug. 3-----	705	711	424	438	689	717	627	649	687	685	347	589	226	316	507	699	434
Aug. 4-----	629	625	689	720	654	709	680	606	582	706	231	675	645	176	440	653	440
Aug. 5-----	685	562	437	705	471	706	400	631	667	708	558	659	542	---	437	608	609
Average-------	691	635	498	504	600	718	590	635	666	602	335	568	448	461	404	686	511

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

JULY 1960

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bismarck, N. Dak.	327	323	321	---	372	334	335	330	310	290	---	304	304	281	---	300	316	316	261	304	281	293	277	---	328	279	321	302	---	293	323
Caribou, Maine	359	356	334	---	---	400	387	359	---	348	---	---	---	329	350	326	---	353	---	---	359	---	346	347	342	320	324	325	327	---	295
Fort Worth, Texas	258	293	300	---	---	---	---	313	322	341	339	306	304	---	---	304	307	306	314	---	303	305	306	---	310	332	305	305	306	296	304
Green Bay, Wis.	[illegible]92	296	341	318	336	365	355	322	300	309	289	284	296	326	305	302	---	304	323	305	263	---	285	279	260	287	309	266	308	274	308

The spectrophotometer measures the total amount of ozone in the atmosphere i.e. the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observations can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations, therefore average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational procedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer," Annals of the International Geophysical Year Volume V, Pergamon Press, 1957

DESCRIPTION of CHARTS

CHART I. A. AVERAGE TEMPERATURE (°F.) AT SURFACE. B. DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL.-The average monthly temperature presented in Chart I-A is computed from the average daily maximum and the average daily minimum which in turn are computed from the daily maximum and minimum temperatures reported by some 225 first-order Weather Bureau stations and 700 cooperative stations. The departures from normal are presented in Chart I-B. They are based on the 30-year normals (1921-50) for the first-order Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for the cooperative stations.

CHART II. TOTAL PRECIPITATION.-

CHART III. A. DEPARTURE OF PRECIPITATION FROM NORMAL (INCHES). B. PERCENTAGE OF NORMAL PRECIPITATION.-Chart II is based on daily precipitation records at about 800 Weather Bureau and cooperative stations. In Chart III the anomaly in the month's precipitation is shown as a departure from the normal total and as a percentage of the normal total. These anomalies show the deviations from the 30-year normals (1921-50) for about 225 first-order Weather Bureau stations in Charts III A and B, supplemented in Chart III-A by the deviation from means of 25 years or more (mostly 1931-55) for about 700 cooperative stations.

CHART IV. TOTAL SNOWFALL.-

CHART V. A. PERCENTAGE OF MEAN MONTHLY SNOWFALL. B. DEPTH OF SNOW ON GROUND.-Chart IV gives the total depth in inches of unmelted snowfall as reported during the month by Weather Bureau and cooperative stations. This is converted in Chart V-A into a percentage of the mean monthly total amount computed for each Weather Bureau station having at least 10 years of record. The depth of snow on ground is that reported by both Weather Bureau and cooperative stations as of 7:00 a.m. Eastern Standard Time on the last Monday of the month. This is reported only for the months December through March. The snowfall charts are presented each month November through April.

CHART VI. A. PERCENTAGE OF SKY COVER BETWEEN SUNRISE AND SUNSET. B. PERCENTAGE OF MEAN MONTHLY SKY COVER BETWEEN SUNRISE AND SUNSET.-These charts are based on visual observations made hourly at Weather Bureau stations and averaged for the month. Sky cover includes, in addition to cloudiness, obscuration of the sky by fog, smoke, etc. Mean amount of sky cover is computed for stations having at least 10 years of record.

CHART VII. A. PERCENTAGE OF POSSIBLE SUNSHINE. B. PERCENTAGE OF MEAN MONTHLY SUNSHINE.-CHART VII-A shows the amount of sunshine received in terms of percentage of the total hours of sunshine possible during the month. In Chart VII-B this is shown as a percentage of the mean number of hours of sunshine received. Means are computed for Weather Bureau stations having at least 10 years of record.

CHART VIII. A. AVERAGE DAILY VALUES OF SOLAR RADIATION, LANGLEYS. B. PERCENTAGE OF MEAN DAILY SOLAR RADIATION.-Shown on Chart VIII-A are the monthly averages of daily total solar radiation, both direct and diffuse, in langleys (gm. cal. cm.$^{-2}$) for all Weather Bureau stations which record this element. Supplementary data for which limits of accuracy are wider than for those data shown are drawn upon in making the analysis. Chart VIII-B shows the percentages of the mean based on the period 1951-55.

CHART IX.-TRACKS OF CENTERS OF ANTICYCLONES AT SEA LEVEL.-

CHART X. TRACKS OF CENTERS OF CYCLONES AT SEA LEVEL.-Centers which can be identified for 24 hours or more are tracked in these charts. Semi-permanent features such as the Great Basin and Pacific Highs and Colorado and Mexico Lows are not shown. The 7:00 a.m. EST positions are shown by open circles, with the intermediate positions at 6-hour intervals shown by solid dots. The date is given above the circle and the central pressure to whole millibars below. A dashed track indicates a regeneration rather than actual movement to the next position. Solid squares indicate position of stationary center for period shown beside it.

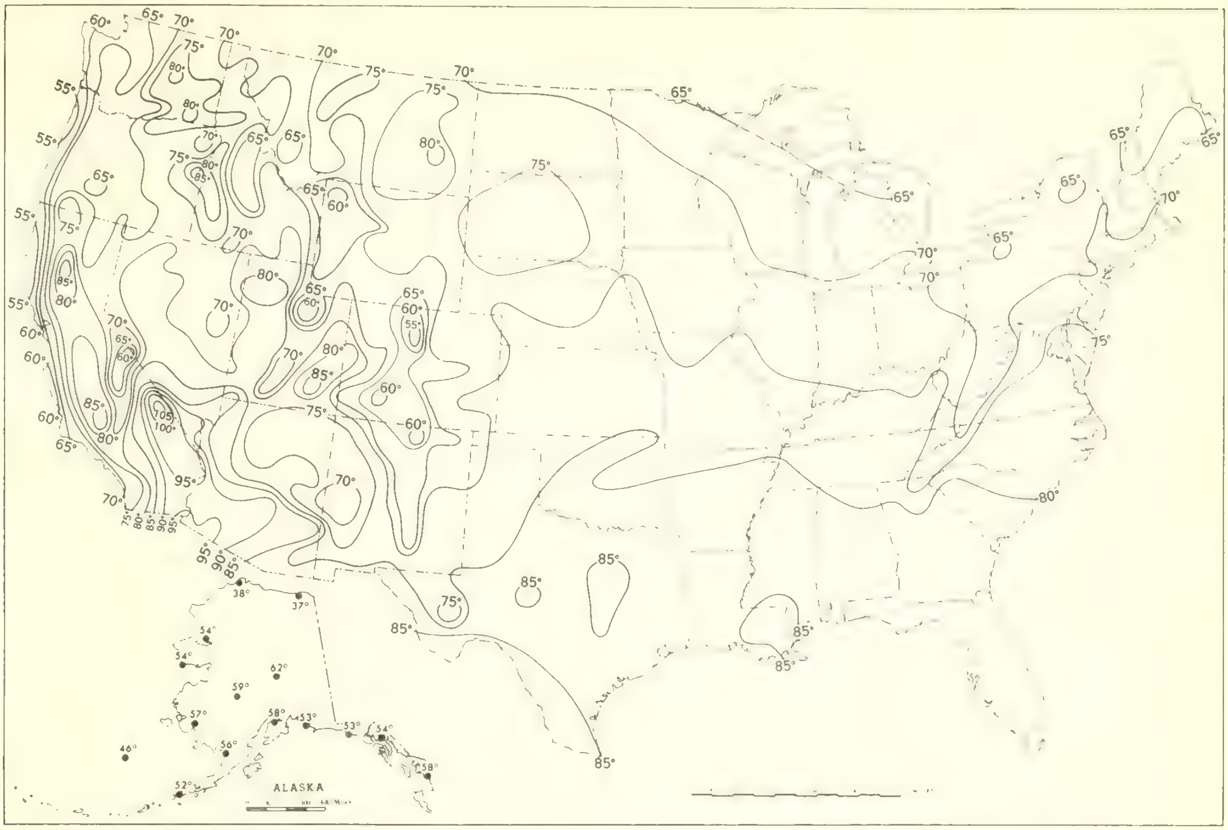
CHART XI. AVERAGE SEA LEVEL PRESSURE (mb.) AND SURFACE WINDROSES.-The average monthly sea level pressure is obtained from the averages of the 7:00 a.m. and 7:00 p.m. EST pressures reported at Weather Bureau stations. Windroses are based on the hourly wind directions (to 16 points of the compass) reported by Weather Bureau stations, each circle or arc indicating 5 percent of the time. The inset shows the departure of the average pressure based on 30-year normals for first-order Weather Bureau stations, other stations having at least 10 years of record, and, for each 10° intersection in a diamond grid over the oceans, from interpolated values read from the Historical Weather Maps for the 20 years of best coverage prior to 1940.

CHARTS XII-XVII. AVERAGE HEIGHT, TEMPERATURE, AND RESULTANT WINDS, 850, 700, 500, 300, 200, and 100 mb.-Height is given in geopotential meters and temperature in degrees Celsius. These are the averages of the 1200 GMT radiosonde reports. Wind speeds are given in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. Directions are shown to 360° of the compass. Winds are based on rawins at the indicated pressure surface and at 1200 GMT.

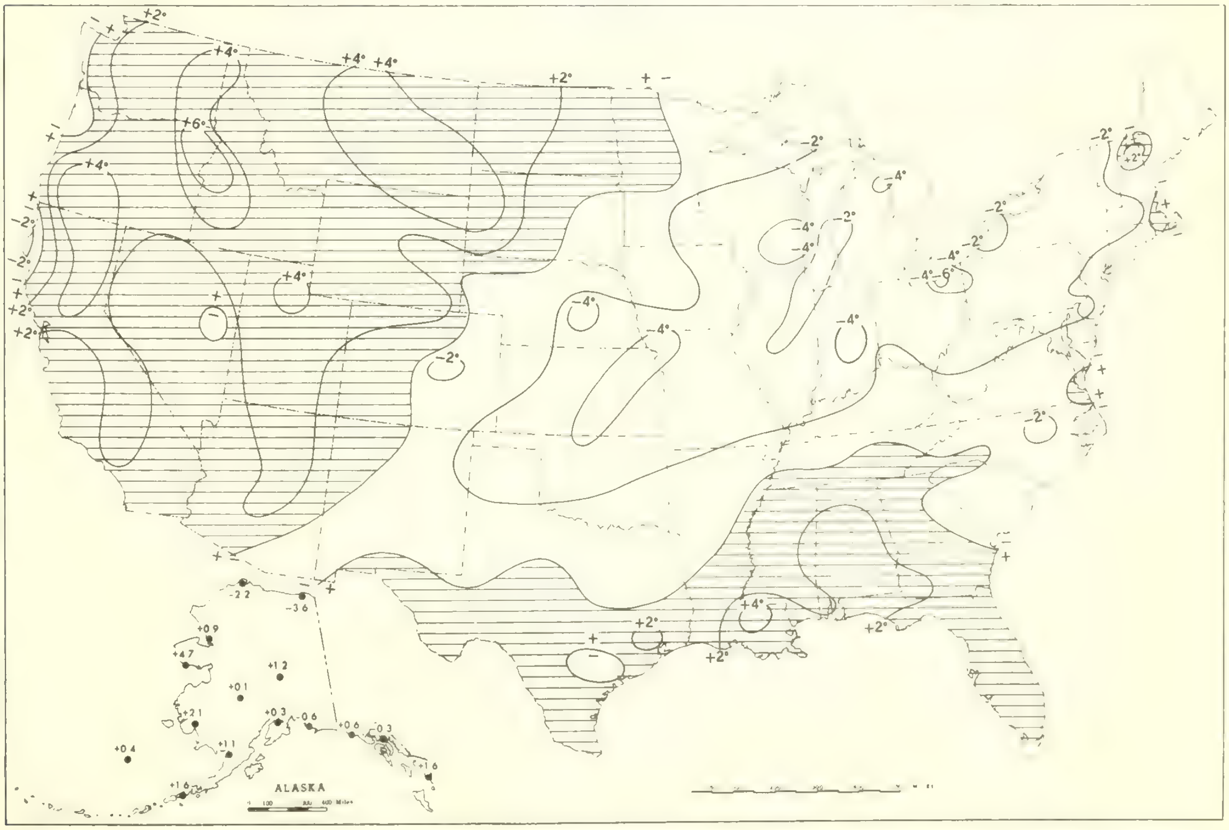
Exact values of most of these charted elements for Weather Bureau stations are printed each month in tabular form in CLIMATOLOGICAL DATA, NATIONAL SUMMARY. Extreme values of temperature and precipitation for each state are included in the table, Condensed Climatological Summary. Annual averages are presented in the CDNS Annual Issue each year.

Note: Charts IIIA, VIA, and VIB will be discontinued
effective August 1960. (Vol. 11, No. 8)

Chart I. A. Average Temperature (°F.) at Surface, July 1960.

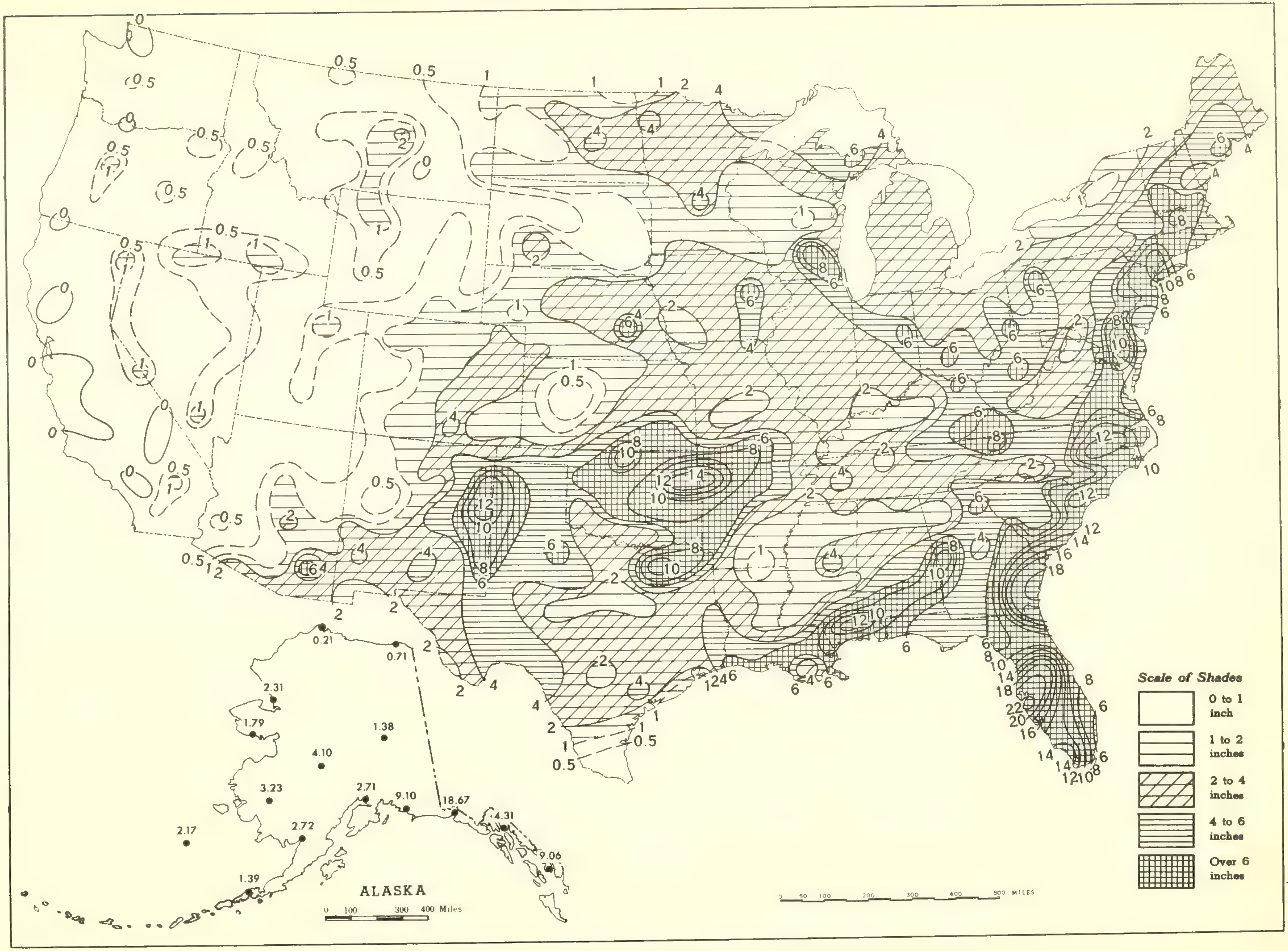


B. Departure of Average Temperature from Normal (°F.), July 1960.



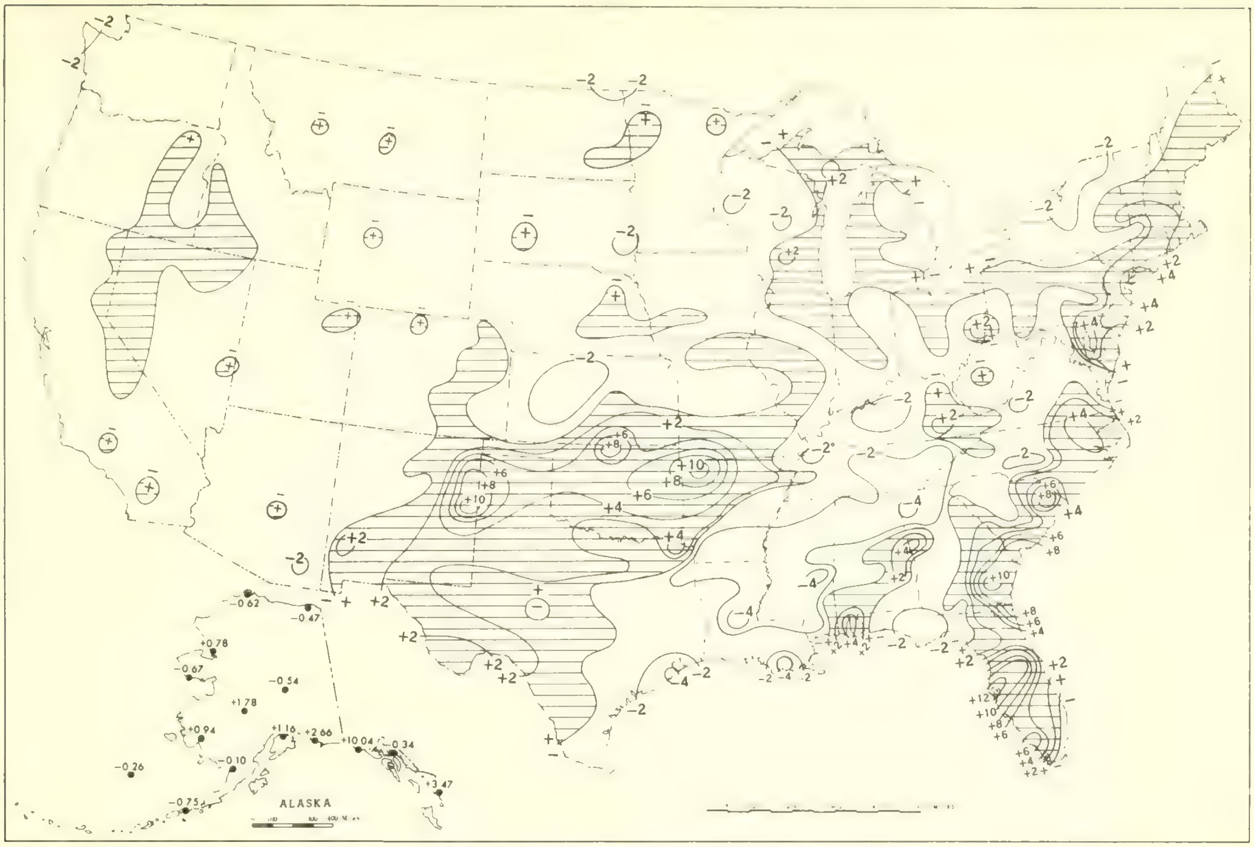
A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), July 1960.

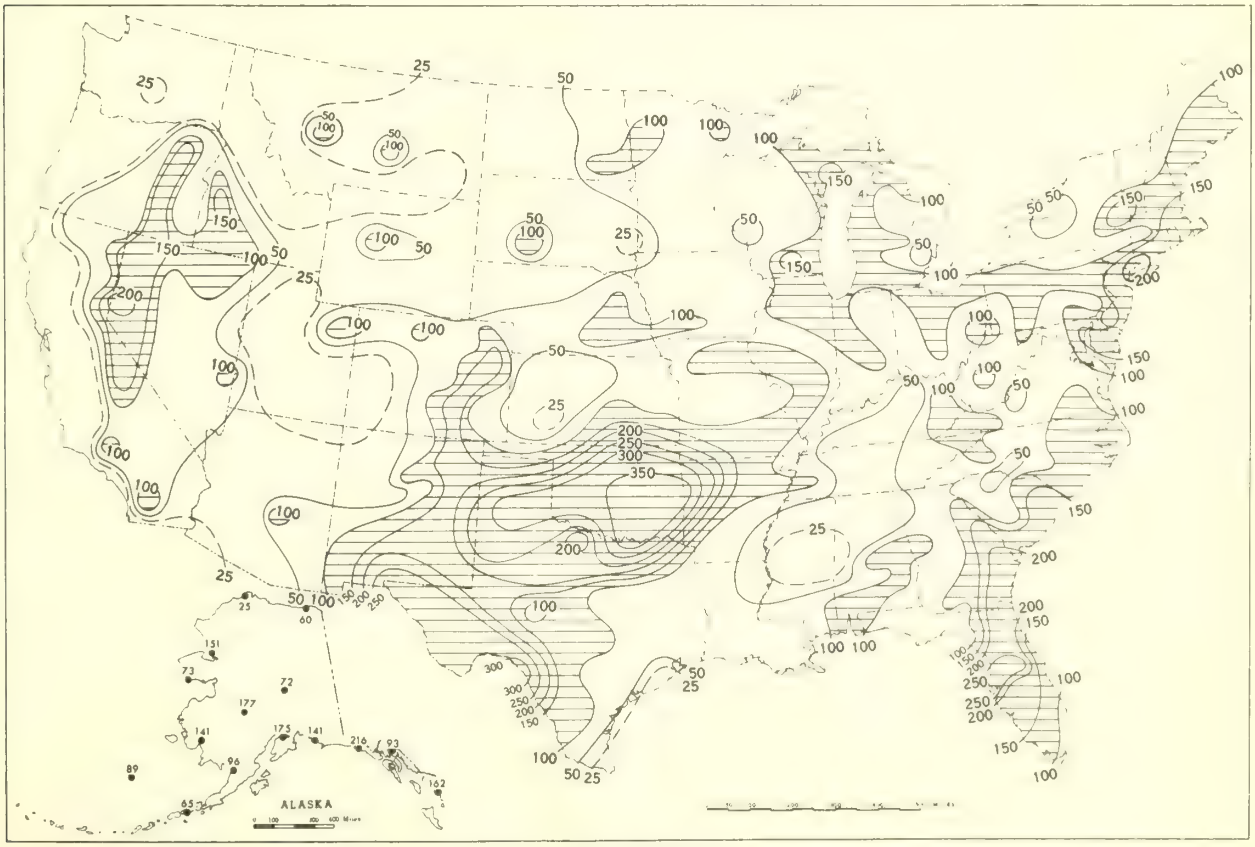


Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), July 1960.

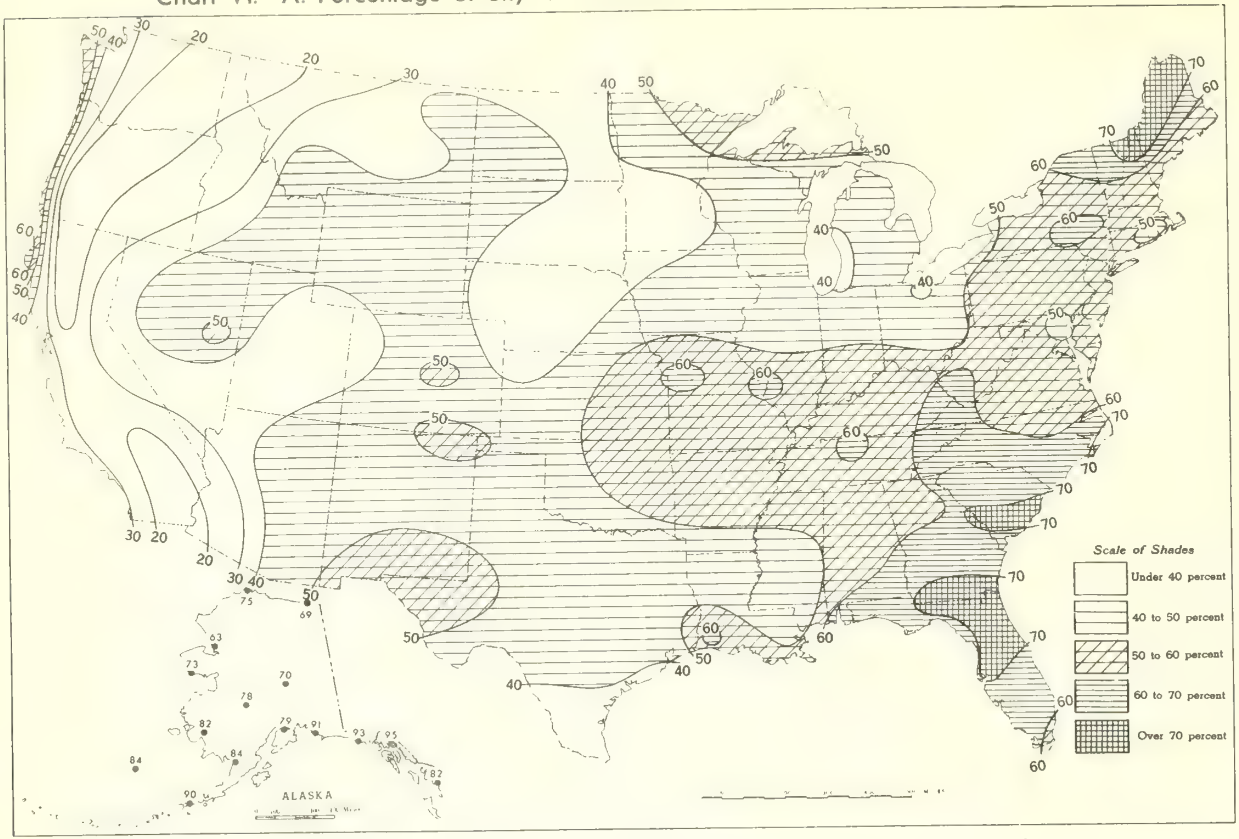


B. Percentage of Normal Precipitation, July 1960.

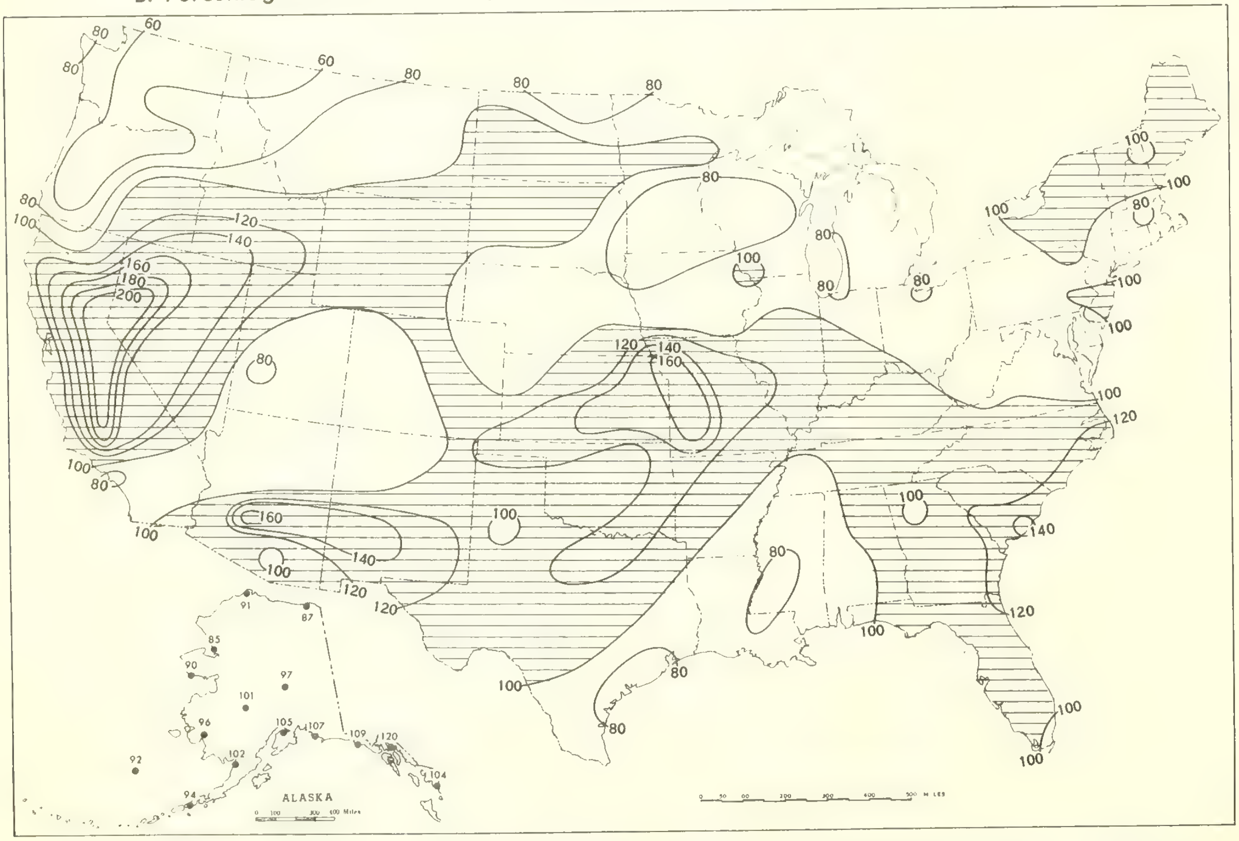


Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, July 1960.

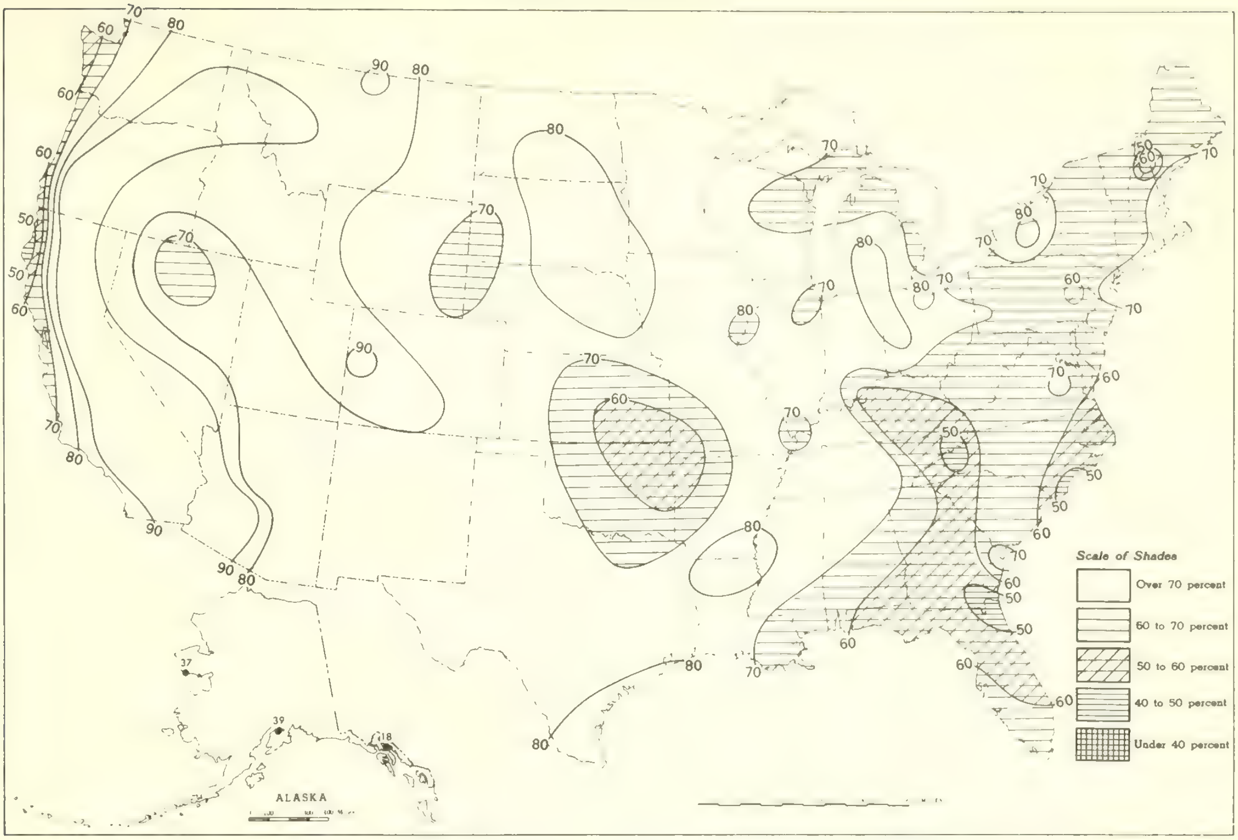


B. Percentage of Mean Monthly Sky Cover Between Sunrise and Sunset, July 1960

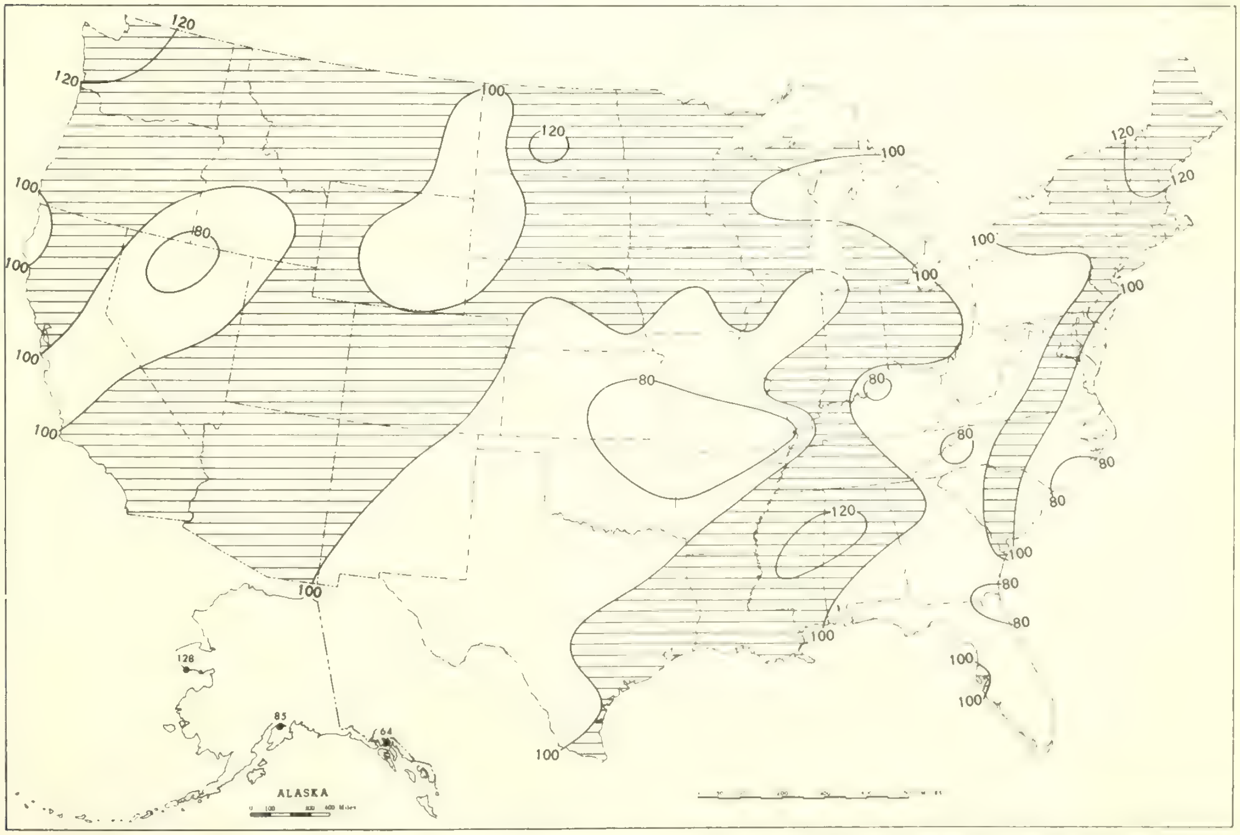


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of mean amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, July 1960

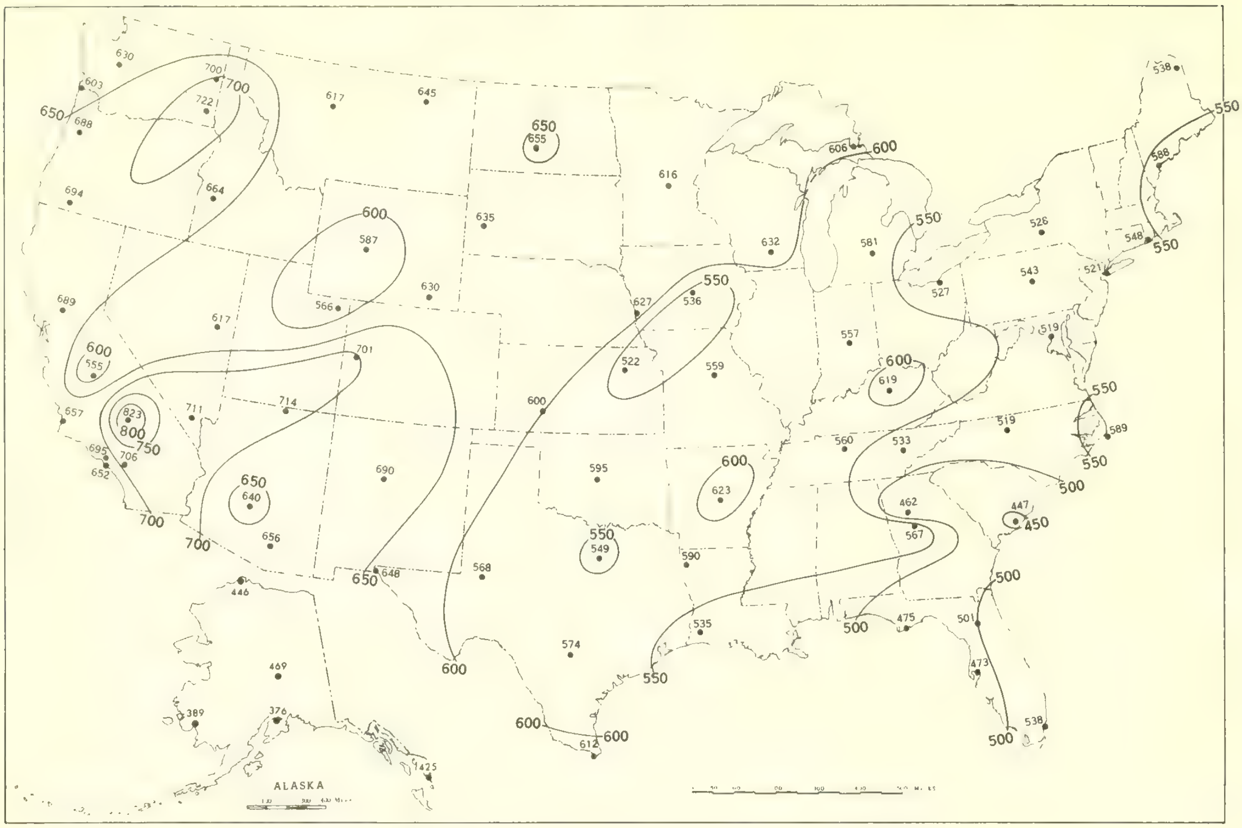


B. Percentage of Mean Monthly Sunshine, July 1960

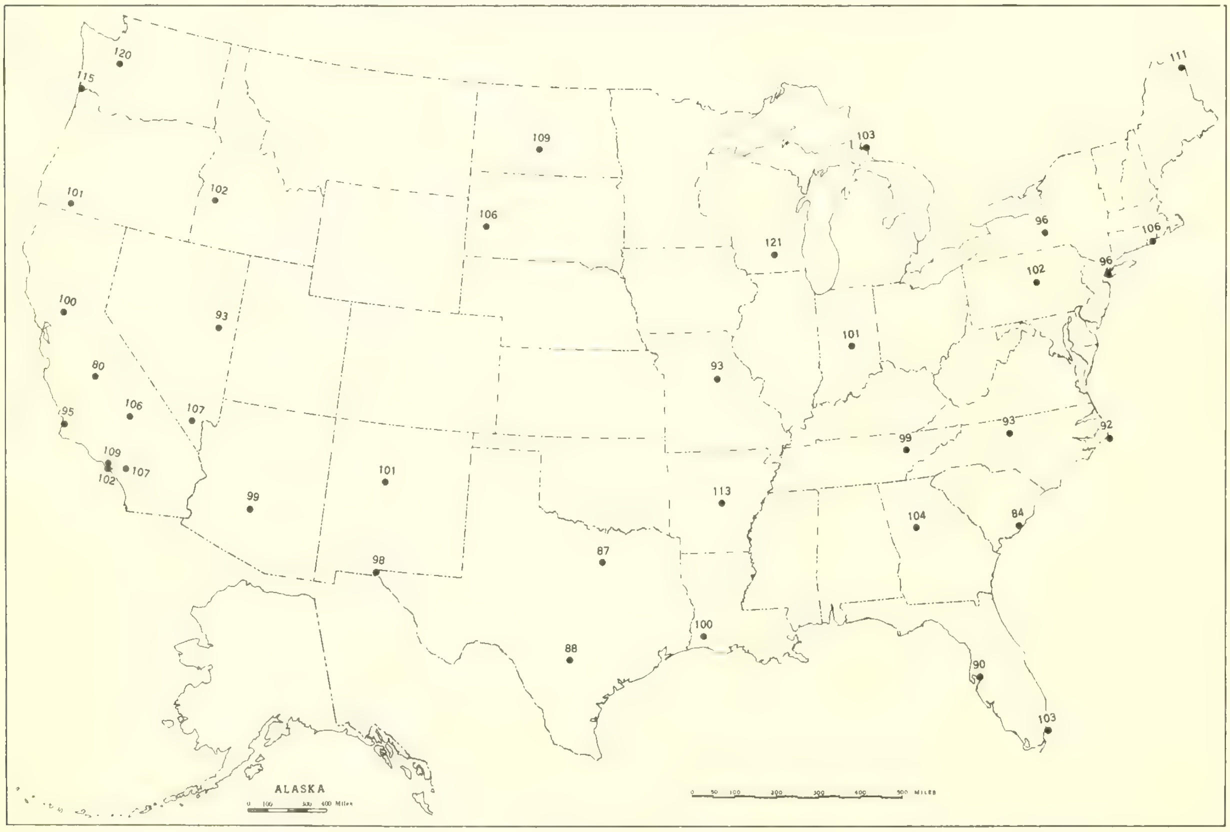


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, July 1960



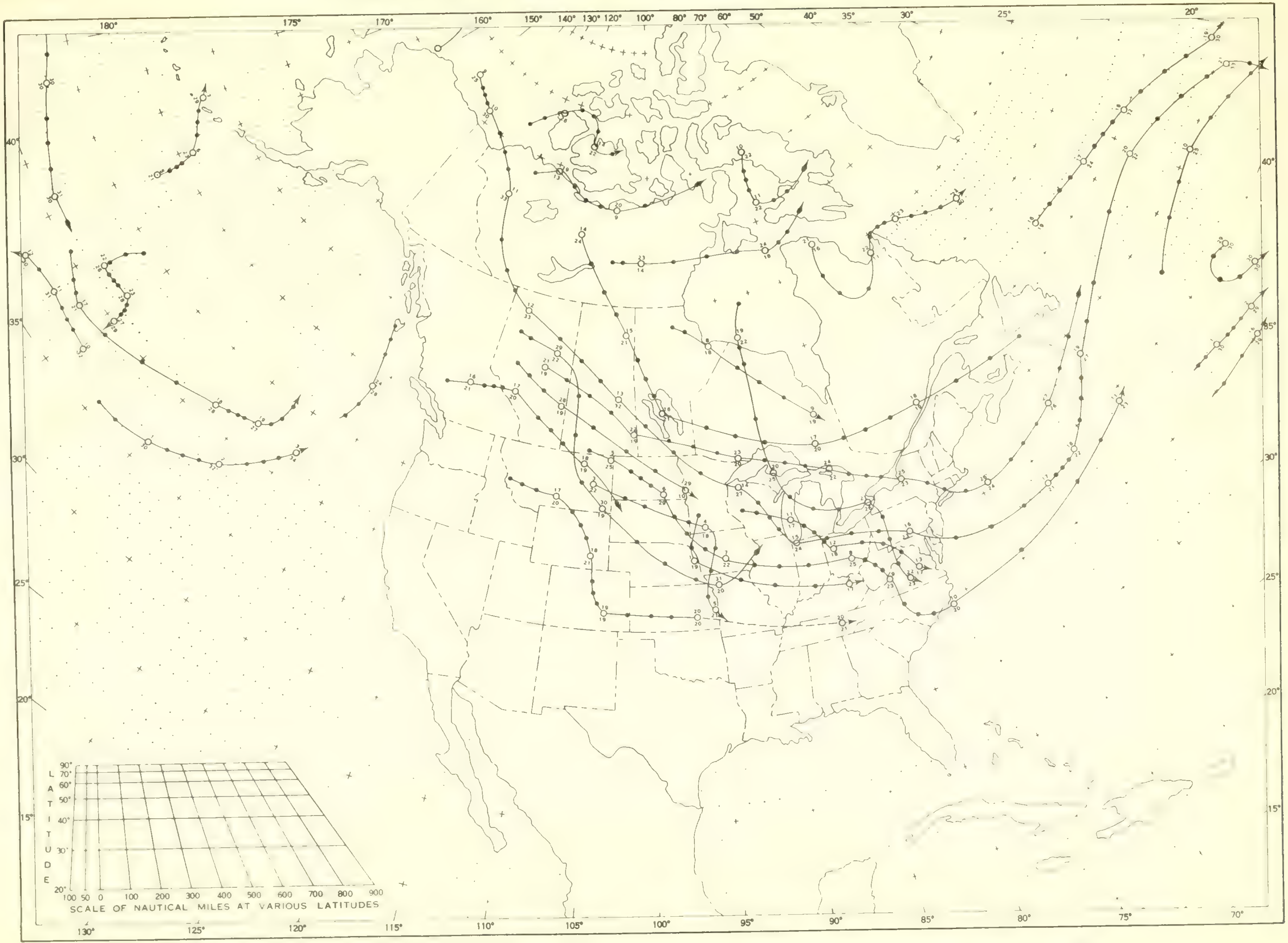
B. Percentage of Mean Daily Solar Radiation, July 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. $^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

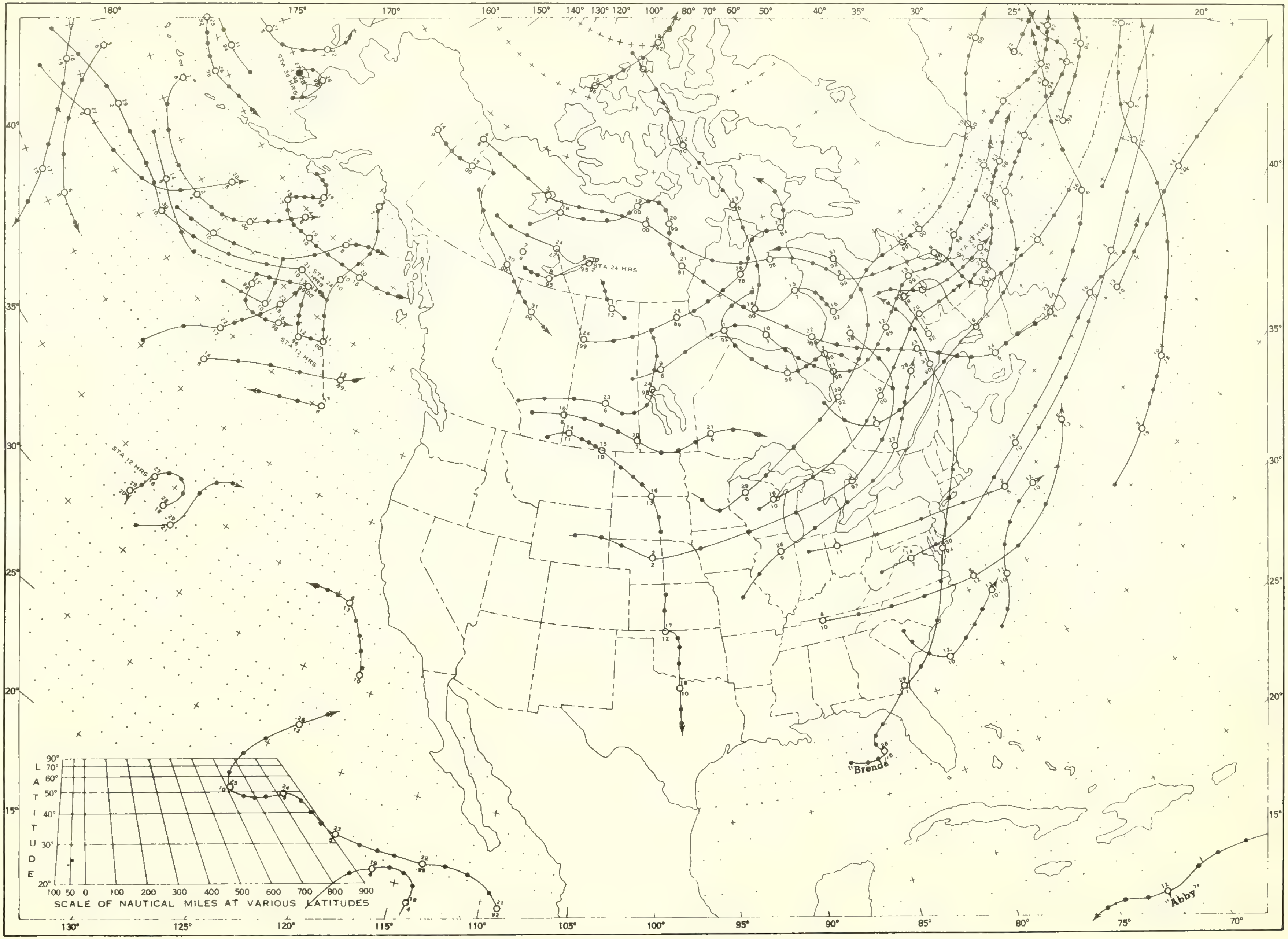
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, July 1960.



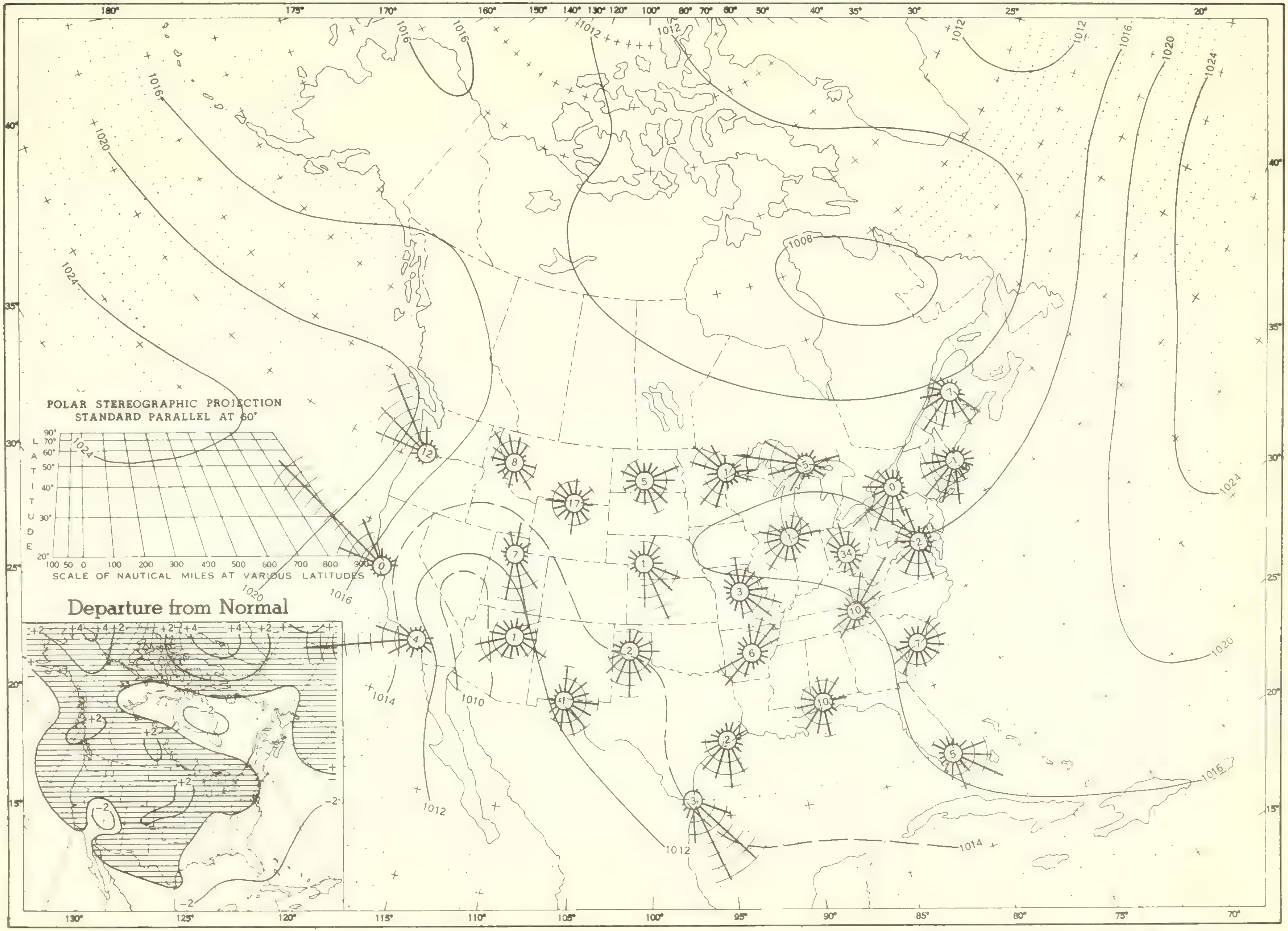
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, July 1960.



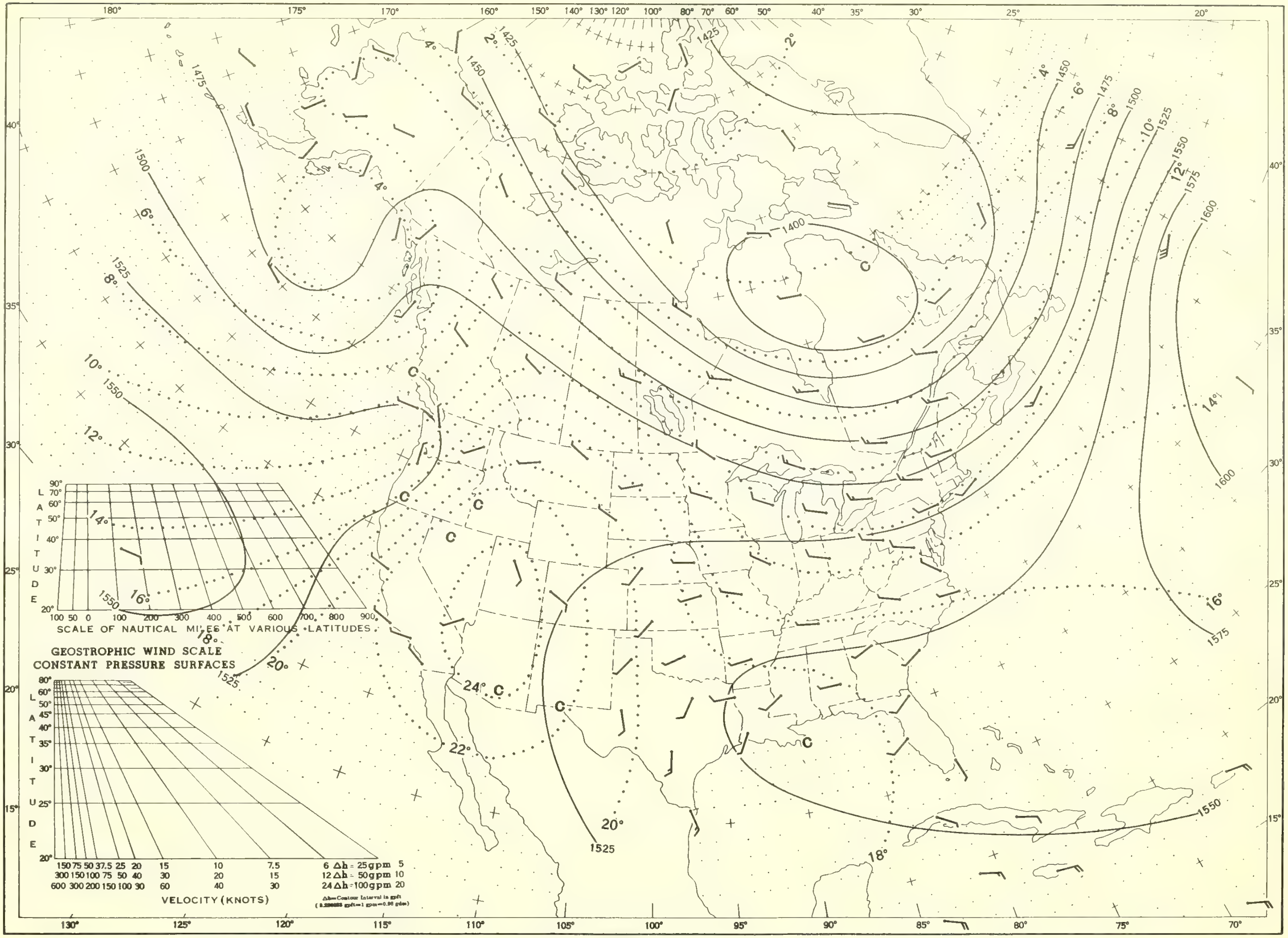
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, July 1960. Inset: Departure of Average Pressure (mb.) from Normal, July 1960.



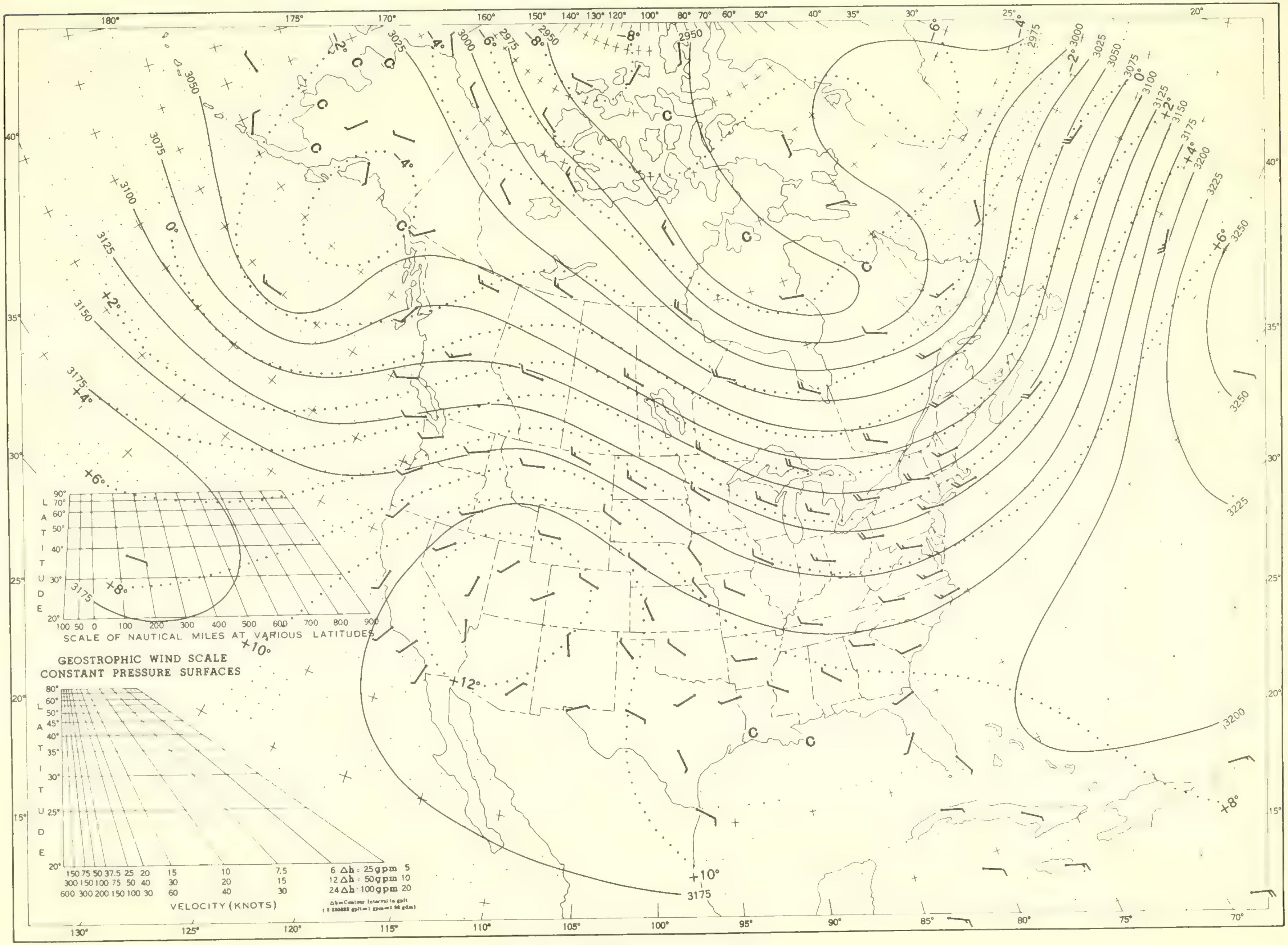
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, July 1960. Average Height and Temperature, and Resultant Winds.



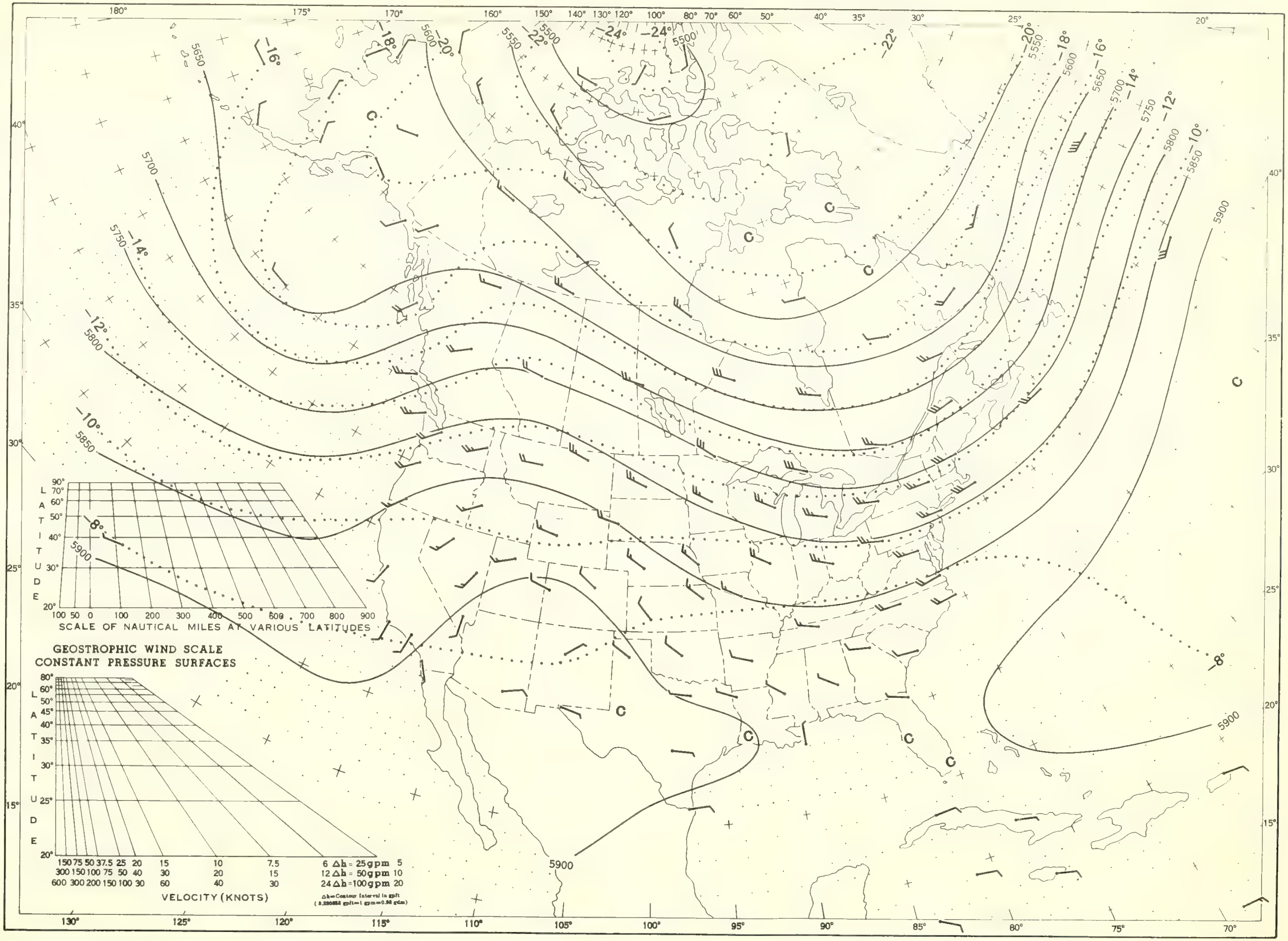
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, July 1960. Average Height and Temperature, and Resultant Winds.



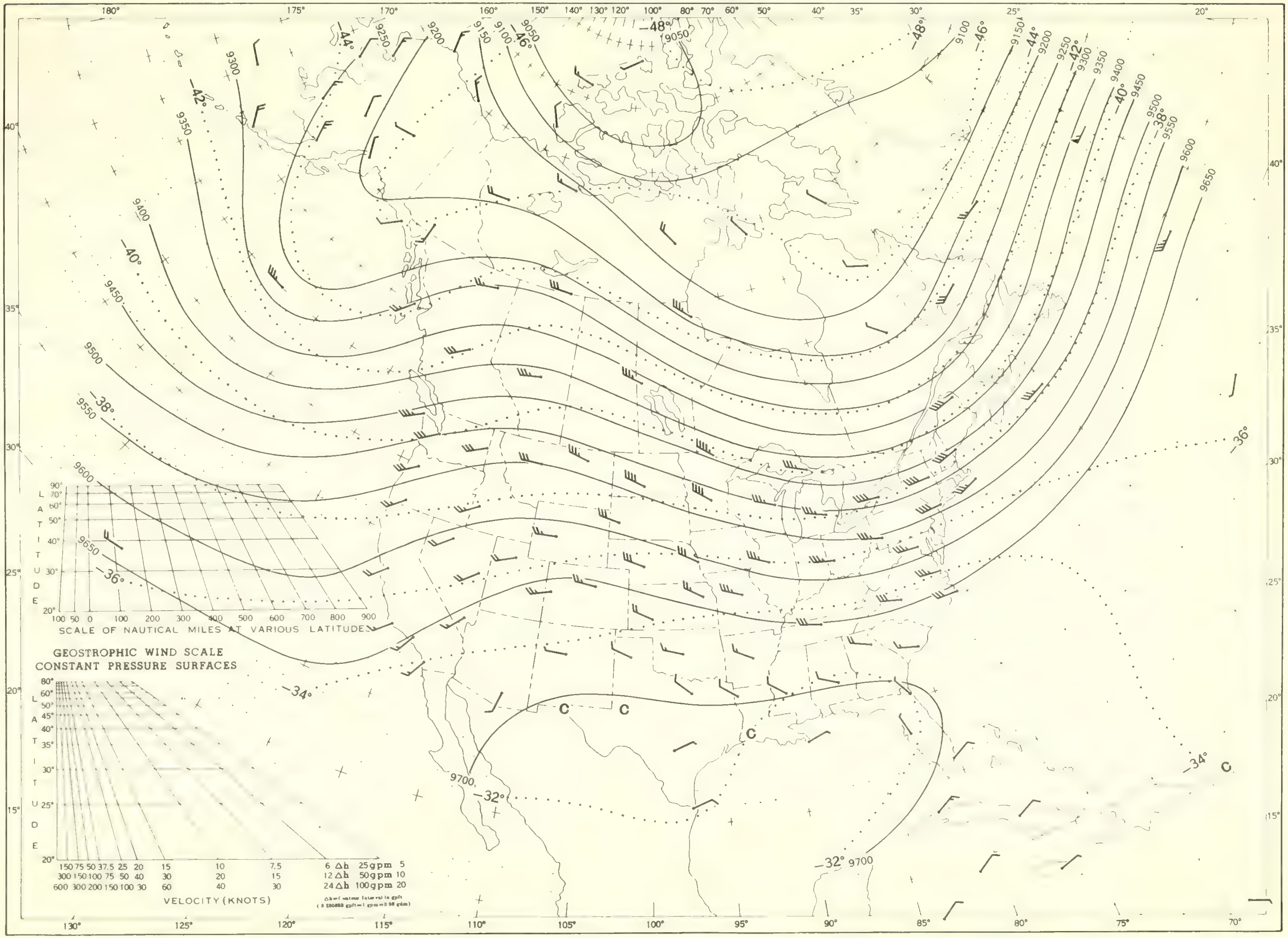
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, July 1960. Average Height and Temperature, and Resultant Winds.



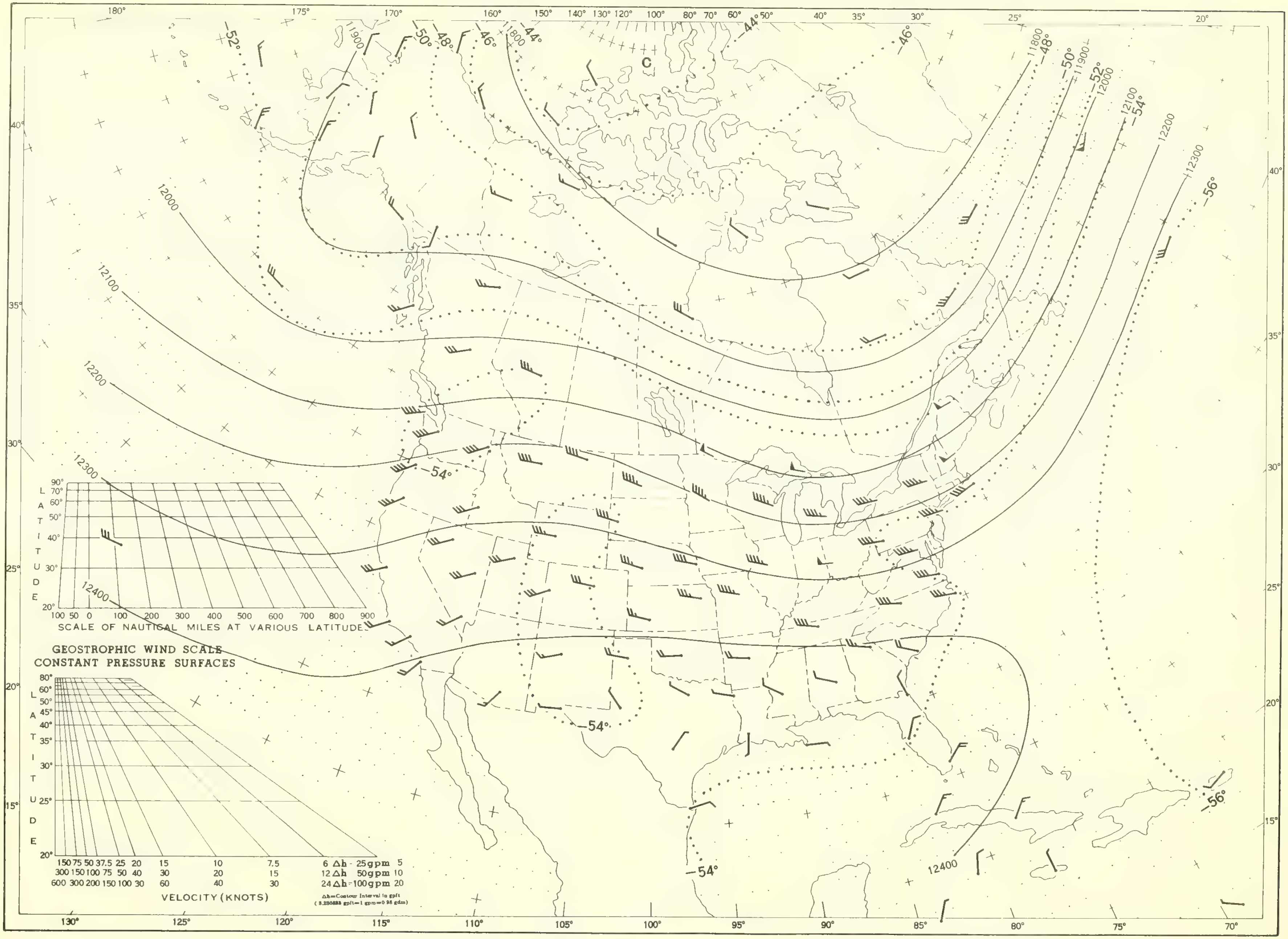
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, July 1960. Average Height and Temperature, and Resultant Winds.



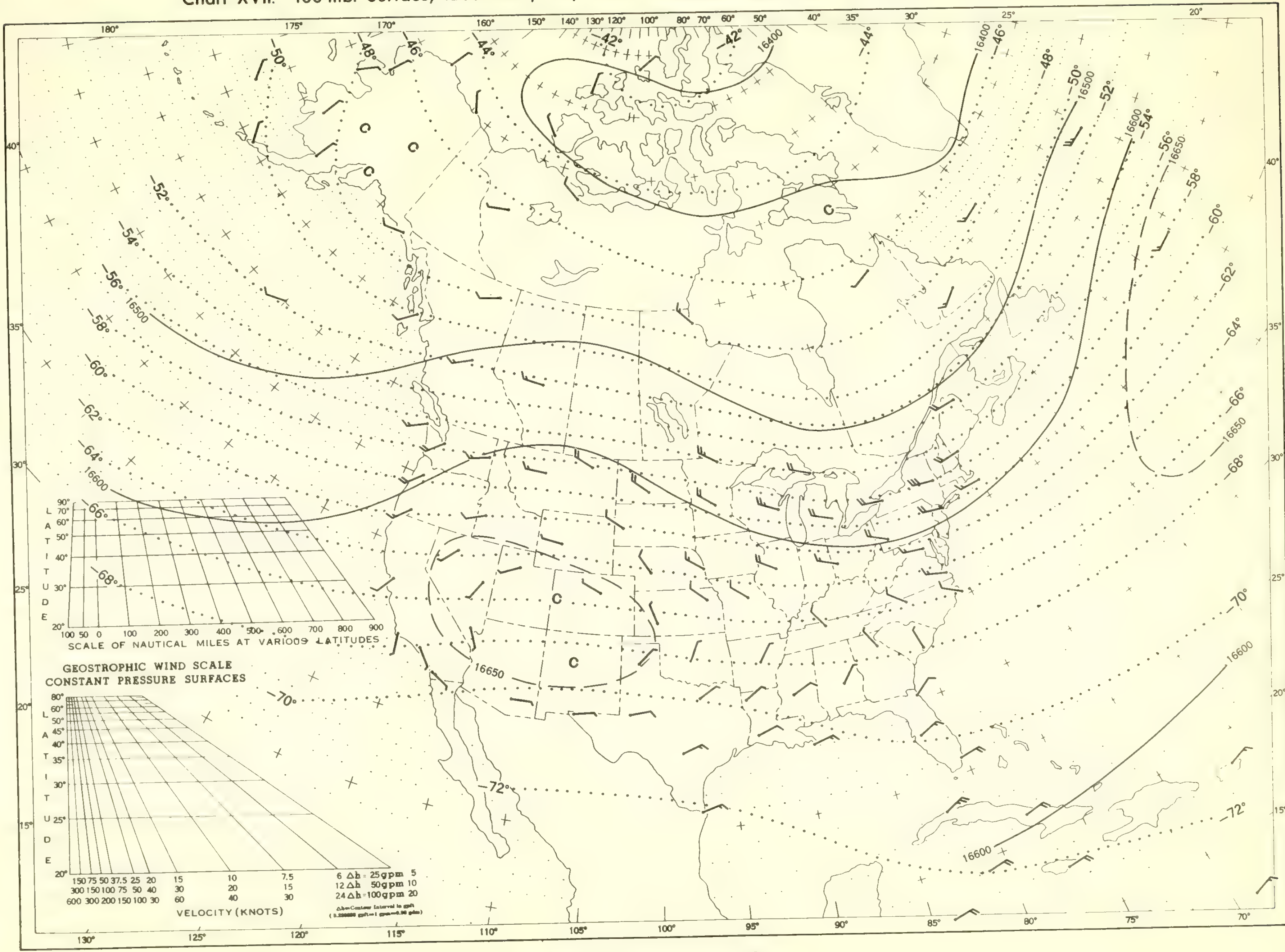
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, July 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, July 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

U. S. DEPARTMENT OF COMMERCE
FREDERICK H. MUELLER, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 8

AUGUST 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

Temperatures for the month, highlighted by a sharp cool snap in the Far West near the end of the month, averaged near normal everywhere except in parts of the Pacific Northwest where they were well below normal. Precipitation, relative to normal, was unusually heavy in the northern Rockies, the eastern portions of the Great Plains, and the extreme upper and lower portions of the Mississippi Valley where numerous severe local storms and several damaging flash floods occurred. The month was extremely dry in parts of Missouri, the west-central Great Plains, and Far Southwest. In the latter area many thousands of acres of forest lands were burned over.

TEMPERATURE.--An outstanding cold spell for August occurred in much of the Far West during the last week when an inflow of cold Pacific air reduced temperatures to record low levels for the season at many locations, and was responsible for averages as much as 17° below normal for the week ending the 28th. With the passage of a cold front, first felt in the Pacific Northwest on the 21st, temperatures dropped sharply, and on the 22d Yakima, Wash., recorded its lowest temperature for August, 35°. On the 23d a low of 20° at Strawberry Reservoir, Utah, equaled the lowest ever recorded in that State during August. On the same morning new record lows for August, 51°, 24°, and 30° were recorded at Fresno, Calif., and Ely and Reno, Nev., respectively. This was the first freeze in August at Reno. Burns, Oreg., recorded 32° or lower on the 23d, 27th, and 28th. Lows of 32° or lower occurred at many stations in Montana on the 23d. The monthly average was the third lowest on record for August at Pocatello, Idaho, and the fourth lowest for Yakima, Wash. Thirteen inches of snow fell on the mountains southeast of Missoula, Mont., on the 22d and 23d, and all nearby hills and mountains in the vicinity of Pocatello, Idaho, were covered with snow on the 22d. Unseasonably cool weather continued in the Northwest until the end of the month, and the lowest for the month in the contiguous United States, 12°, was recorded at Bondurant, Wyo., on the 28th. A low of 24° on the 26th at Deerfield in the Black Hills of South Dakota equaled the lowest for August in that State. Lowest temperatures in the Northeast also occurred late in the month, and New Hampshire's lowest temperature for August, 26°, was recorded at Fabyan on the 25th.

In the remainder of the Nation temperatures during the month remained within seasonal ranges.

August ended a warmer than normal summer in the Far West, a relatively cool summer in the central Great Plains, the Ohio and upper Mississippi Valleys, and Great Lakes region, while temperatures for the summer averaged about normal in the Atlantic and Gulf Coastal States. At a number of places in the Indiana-Ohio area the temperature failed to reach 90° during the entire summer.

PRECIPITATION.--Showers of 1/2 to 2 inches or more of precipitation fell in the northern Rocky Mountain States in the first and last weeks. This August was among the 10 wettest on record at many locations in this region. The rains were particularly welcomed since they came after a dry spell which had persisted for 1 to 2 months. At Boise, Idaho, 0.79 inch of rain in 24 hours (0.01 inch on July 31) on August 1 set a new record for August there. On the same date Lewiston, Idaho, had 1.36 inches in 24 hours, also a new August record. Helena, Mont., had a trace or more of rain on 15 days.

Rainfall in the upper Great Plains and upper Mississippi Valley and Great Lakes region fell at intervals throughout the month, and totaled from 2 to over 10 inches. Flood damage occurred in parts of Peoria, Ill., as a result of 3 or 4 inches of rain on the 18th and 19th. This was among the 10 wettest Augusts on record at Des Moines, Iowa, Lincoln and Omaha, Nebr., La Crosse and Milwauke, Wis., and Sheridan, Wyo., where totals ranged from 2.32 inches at Sheridan to 7.12 inches at Omaha. At the end of the month Escanaba, Mich., had a total for the year to date of 27.28 inches, already more than for a normal year.

In the lower Great Plains and lower Mississippi Valley rainfall was fairly well distributed through the month. Baton Rouge, La., had rain on 26 days. Heavy rains broke a severe dry spell in Mississippi, and Vicksburg measured 16.58 inches for its greatest total for August on record and its wettest month since October 1918. Houston, Tex., had measurable rain on 12 consecutive days, an alltime record, and on 21 days during the month, a new August record.

August rainfall was 50 percent deficient in the west-central Great Plains and much of the Far Southwest. In much of the latter area precipitation has been less than 50 percent of normal for the entire summer. Goodland, Kans., measured only 0.29 inch for its driest August on record; Columbia, Mo., had only 0.27 inch for its driest August since 1935. Richfield, Kans., and Garden City, Tex., had no rain at all during the month, and Regnier, Okla., had only a trace. More than 500 stations in the Far West had no rain, 511 of them in California.

DESTRUCTIVE STORMS AND UNUSUAL WEATHER PHENOMENA.--Destructive storms were blamed for the death of over 40 persons, more than 100 injuries, and property losses of a few millions of dollars. Numerous severe local storms in north central regions the first week were responsible for several deaths and heavy damage in many sections. One of the worst of these storms occurred in Audubon and Guthrie Counties, Iowa, on the 6th when winds up to 100 m.p.h. caused losses of about $1 million. A seiche in Lake Michigan on the 3d caused the lake level to raise 4 to 6 feet in many places. This was the first seiche to be forecast by the Weather Bureau, and no loss of life occurred.

Several very destructive hailstorms were reported in Montana. Damage from one of these storms which occurred about 30 to 40 miles northeast of Glasgow on the 4th was responsible for losses estimated at more than $500,000. Forest fires, the origin and control of which

GENERAL SUMMARY OF WEATHER CONDITIONS—Continued

AUGUST 1960

are determined to a great extent by weather conditions, burned over a large acreage during August. Fires in the Tahoe and Toiyabe National Forests burned over 35,000 acres from about the 21st through the 23d. Powerlines over the Sierras were severed by the fire and western Nevada was without power for about 30 hours on the 21st and 22d. Several large forest fires occurring in the Black Hills from the 22d through the 26th, were difficult to control owing to winds which averaged about 15 m. p. h. Forest fires in the vicinity of Pocatello, Idaho, were ended by rains on the 22d.

CONDENSED CLIMATOLOGICAL SUMMARY

AUGUST 1960

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Vernon	102	6	Talladega	55	26	Fairhope	17.19	Muscle Shoals FAA AP	1.79
Arizona	2 Stations	117	14+	Maverick	30	18	Sasabe	7.05	5 Stations	.00
Arkansas	Warren	104	5	Bentonville	51	12	Crossett 7S	11.68	Hector	.40
California	Cow Creek	123	13+	Bridgeport	21	23	Daggett FAA AP	.90	512 Stations	.00
Colorado	Lamar	106	5	Fraser	16	30	Springfield 7WSW	2.13	2 Stations	T
Connecticut	Hartford WB AP	92	29	Coventry	35	25	Norfolk 2SW	5.97	Lake Konomoc	.84
Delaware	Dover	96	29	2 Stations	51	26+	Lewes 1SW	6.10	Selbyville	1.31
Florida	Live Oak 2ESE	101	15	3 Stations	62	25+	Longboat Key	12.66	Winter Haven	1.78
Georgia	Rome	101	2	Blairsville Exp Sta	55	29+	Blue Ridge Resvr Dam	11.30	Thomaston 2S	1.11
Idaho	Grand View	106	10	Obsidian 3SSE	16	28	Wallace	3.52	Caldwell	.08
Illinois	2 Stations	100	6+	Marengo	46	15	Paw Paw	7.55	Roberts 3N	.37
Indiana	do	98	18+	Waterloo	45	12+	Delphi	7.07	W Baden Springs Col	.54
Iowa	Sioux City WB AP	101	[illegible]	Saratoga 2E	41	15	Bedford	11.90	Muscatine 4ENE	1.00
Kansas	Beloit 1ESE	109	5	2 Stations	44	19	Reading	12.42	Richfield 4N	.00
Kentucky	Princeton	100	8+	5 Stations	55	16+	Berea Water Works	8.41	Golden Pond 8N	.51
Louisiana	3 Stations	101	6+	2 Stations	60	28+	Hackberry 8SSW	17.15	Hosston	2.38
Maine	2 Stations	97	23+	4 Stations	32	25+	Bingham Wyman Dam	4.90	Machias	.43
Maryland	do	98	30	Sines Deep Creek	42	25	Boyds 2NW	8.93	Leonardtown 3NW	1.25
Massachusetts	do	94	30+	West Cummington	36	25	Tully Dam	5.61	Hyannis 3NE	.69
Michigan	Charlotte	93	18	Watersmeet Fish Hatch	31	15	Stephenson 5W	8.58	Detour 1N	.70
Minnesota	Stillwater	98	2	Bigfork	30	14	Park Rapids	8.75	Brimson	1.43
Mississippi	Moorhead	103	5	Ripley	59	13	Vicksburg WB City	16.58	Clarks Dale	1.67
Missouri	Butler	103	5	2 Stations	45	12	Spickard 7W	11.20	Jeff City Lincoln U	.17
Montana	Mildred	105	22	Wisdom	19	28	Bozeman 12NE	5.74	Sonnette 4N	.35
Nebraska	Curtis	109	5	Henzel 20S	39	26	Omaha N Omaha Airport	11.77	Benkelman	.28
Nevada	Mesquite	117	8	Mountain City RS	17	28	Jarbidge	1.38	19 Stations	.00
New Hampshire	Windham	94	29	Fabyan	26	25	Dublin	4.36	Lincoln	.53
New Jersey	Lambertville	96	29	Layton 3NW	44	18	Oak Ridge Reservoir	9.68	Woodstown	1.93
New Mexico	Jal	107	24	Gavilan	24	18	Ragland	8.16	Bloomfield 3SE	.00
New York	Cairo	96	29	Saranac Lake	31	25	Warwick	9.31	Warrensburg	.39
North Carolina	2 Stations	100	8+	3 Stations	50	26	Rosman	13.81	Yadkin College	.87
North Dakota	Dickinson Exp Sta	107	23	Medora 3NNE	33	24	Oakes	11.41	Medora 22NNW	1.12
Ohio	Chilo Dam 34	99	5	Chippewa Lake	41	1	Hiram	7.51	Findlay FAA Airport	1.02
Oklahoma	Frederick	108	4	Boise City 2E	50	18	Jefferson	10.19	Regnier	T
Oregon	2 Stations	107	12+	Seneca	15	28	Government Camp	4.88	2 Stations	.00
Pennsylvania	3 Stations	96	30+	Coudersport 3NW	32	25	Palmerton	9.43	Madera	.57
Puerto Rico	Utuado	97	9	Garzas Dam	52	5	Rio Blanco Upper	17.38	Lares	2.19
Rhode Island	3 Stations	89	30+	Kingston	41	26	Greenville	2.67	Newport	.64
South Carolina	2 Stations	99	9+	2 Stations	56	19	Sassafras Mountain	13.05	Newberry	1.12
South Dakota	do	109	22	Deerfield 5NW	24	26+	Canton	10.27	2 Stations	.48
Tennessee	Savannah	104	1	Unicoi 2SES	51	8	Cosby	12.32	Portland 4NNW	.71
Texas	Presidio	110	3	Mount Locke	48	12	Port Arthur	15.05	Garden City 1E	.00
Utah	St George PH	110	12	Strawberry Res	20	23	Salt Lake City WB AP	1.33	3 Stations	.00
Vermont	Enosburg Falls	93	19	West Burke	31	26+	Vernon	4.26	Union Village Dam	.57
Virginia	Buchanan	99	3	2 Stations	44	26	West Point 2SW	10.31	Hog Isl Ltl Machipongo	1.03
Washington	White Swan	107	6	do	28	29+	Stockdill Ranch	6.98	Quincy 3S	.02
West Virginia	Logan	98	3	3 Stations	40	26+	Grantsville 2NW	7.98	Petersburg	1.47
Wisconsin	3 Stations	95	31+	2 Stations	32	15	Big Falls Hydro	11.15	Alma Dam 4	2.69
Wyoming	2 Stations	105	21+	Bondurant 3NW	12	28	Alva 5SE	3.65	Lysite	.00

+ And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

AUGUST 1960

State and station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	No. of days: Max. 90° F or above	No. of days: Min 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F	°F	°F	°F.	°F		°F		#		°F	%	In.	In.	In			In	In.	M p. h.		M p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	992.9	------	89	71	80.1	+1.0	96	7	67	30	13	0	--	--	4.09	-0.46	1.62	12	8	0.0	0	----	---	30	NE	8	5	13	13	6.5	64
Huntsville	605	994.6	1017.6	91	70	80.5	----	97	8+	68	31+	19	0	70	75	5.51	----	2.10	12	8	.0	0	5.6	SE	*32	W	9	9	11	11	5.9	--
Mobile	211	1015.4	1017.6	88	72	79.8	-1.0	93	30	69	30+	12	0	72	82	6.67	.36	2.20	15	15	.0	0	6.7	S	*41	W	22	4	13	14	6.9	-
Montgomery	195	1009.7	1017.7	90	73	81.5	.6	95	8	69	28+	19	0	71	77	4.26	-.49	1.91	13	12	.0	0	7.2	S	31	SW	13	5	11	15	6.1	60
ALASKA																																
Anchorage	90	1006.1	1011.1	62	48	55.3	-.3	75	10	38	31	2	0	47	76	2.70	.14	1.13	15	1	.0	0	7.3	SSW	*23	SSW	6	4	8	19	7.5	40
Annette	110	1010.8	1014.7	64	51	57.5	-.5	90	8	41	30	4	0	51	82	3.51	-1.75	1.31	13	1	.0	0	7.1	SSE	*26	SSE	27	5	3	23	7.7	--
Barrow	22	1013.5	1014.3	38	30	34.1	-4.3	54	10	22	21	0	22	32	94	1.45	.65	.83	13	0	.6	T	12.8	E	*28	E	27+	1	3	27	9.0	--
Barter Island	39	1011.5	1013.5	41	33	37.0	-2.2	67	11	28	24	0	14	35	95	.68	-.50	.19	19	0	2.9	1	11.1	ENE	*26	W	20	1	1	29	9.3	--
Bethel	125	1007.8	1009.4	57	43	50.1	-2.6	73	11	33	28	1	0	46	88	3.96	-.06	.89	20	0	.0	0	12.9		*36	S	4	1	3	27	9.0	--
Cold Bay	90	1008.8	1012.8	55	47	51.2	-.9	71	31	40	28+	1	0	47	88	4.30	.33	.64	22	0	.0	0	14.9	SSE	*44	SE	11	0	2	29	9.4	--
Cordova	40	1010.2	1011.8	60	44	52.1	-1.3	71	9	34	20	1	0	48	85	7.98	-1.74	1.90	22	0	.0	0	4.1	E	*14	ESE	26+	4	4	23	8.2	--
Fairbanks	436	993.2	1010.3	65	45	55.1	-.5	82	11	35	30+	7	0	49	79	1.71	-.55	.82	15	0	.0	0	6.1	SW	*18	WSW	27+	2	8	21	7.8	--
Juneau	17	1012.2	1013.1	61	46	53.3	-.9	73	10	35	30	3	0	48	84	4.77	-.39	1.56	16	0	.0	0	8.5	E	*35	ESE	27	5	4	22	7.9	32
King Salmon	44	1009.1	1011.1	59	45	52.3	-2.3	76	10	31	28	1	1	47	83	3.56	-.45	.63	19	0	.0	0	10.2	SSW	*29	SSE	11+	0	8	23	8.6	--
Kotzebue	10	1008.1	1008.8	58	47	52.6	1.9	78	12	40	16	2	0	48	85	1.66	-.29	.43	14	0	.0	0	10.9	W	*24	ENE	15+	3	6	22	8.0	--
McGrath	334	997.6	1010.1	61	46	53.3	-.2	82	11	35	25	4	0	46	78	3.49	-.14	.82	19	0	.0	0	5.9	S	*21	S	5	2	4	25	8.6	-
Nome	13	1007.1	1007.9	57	44	50.5	1.4	72	11	36	16	1	0	45	79	1.79	-1.97	.36	17	0	.0	0	10.5	ENE	*25	W	30+	4	7	20	7.6	25
Shemya	122	1004.7	1008.6	54	47	50.5	----	58	23	43	23	0	0	48	93	1.26	----	.39	15	0	.0	0	14.3	WSW	*30	WSW	27	1	1	29	9.4	--
St. Paul Island	22	1008.1	1009.5	51	43	47.0	-1.0	54	4	33	18	0	0	45	93	2.63	-.36	.50	22	0	.0	0	----	---	--	---	--	1	2	28	9.3	--
Yakutat	28	1012.2	1013.1	60	45	52.8	.0	68	31+	34	30	0	0	49	89	10.83	.29	3.70	19	0	.0	0	6.4	ESE	*32	ESE	27	5	6	20	7.8	--
ARIZONA																																
Flagstaff	6993	------	------	81	50	65.3	1.9	89	7	38	18+	0	0	--	--	3.28	.68	1.70	8	13	.0	0	----	---	--	---	--	14	10	7	4.3	--
Phoenix	1109	970.2	1008.4	102	78	89.7	1.4	109	2+	72	28+	29	0	61	42	.82	-.17	.34	5	7	.0	0	6.6	E	*46	E	9	21	6	4	3.0	97
Prescott	5014	848.3	1011.2	91	61	75.9	2.0	99	12	54	27+	20	0	49	45	1.55	-2.15	1.00	6	10	.0	0	9.3	SSW	34	NE	12	17	9	5	3.5	79
Tucson	2584	923.5	1009.4	96	72	84.2	.4	104	30	67	20	28	0	60	48	2.09	-.06	1.06	8	13	.0	0	8.8	SSE	*40	ESE	31	12	13	6	4.8	79
Winslow	4880	852.0	1008.9	95	62	78.7	3.7	102	7	48	18	28	0	45	36	.53	-1.09	.30	5	5	.0	0	10.3	SW	*35	SW	13	19	7	5	3.7	--
Yuma	199	1002.7	1007.9	107	81	94.2	.5	116	18	72	29	31	0	63	41	.01	-.49	.01	1	1	.0	0	10.3	SSE	30	SE	3	23	6	2	2.1	90
ARKANSAS																																
Fort Smith	458	998.0	1015.6	93	71	82.0	-.1	98	8+	64	13+	26	0	70	74	1.63	-.99	.51	5	6	.0	0	5.4	NE	37	S	26	14	12	5	4.5	69
Little Rock	257	1003.1	1016.0	92	71	81.4	.1	101	5	62	13	24	0	71	75	2.17	-.98	1.55	5	3	.0	0	6.1	SW	45	SE	20	11	14	6	5.1	70
Texarkana	361	------	1015.9	92	73	82.3	-.4	99	7+	68	20	24	0	--	--	7.10	4.22	2.88	9	10	.0	0	4.7	SSW	--	---	-	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	993.2	1010.8	97	66	81.5	-.3	106	20	57	23	27	0	49	34	.00	-.01	.00	0	0	.0	0	5.4	NW	*21	N	22	31	0	0	.4	--
Bishop	4108	872.3	1010.2	98	55	76.1	2.6	105	13+	43	24	29	0	--	--	T	-.14	T	0	3	.0	0	----	---	--	---	--	28	3	0	.9	--
Blue Canyon	5280	840.5	1011.2	79	58	68.4	1.1	88	19+	41	22	0	0	--	--	.00	-.05	.00	0	1	.0	0	6.9	WSW	30	ENE	17+	17	11	3	3.0	--
Burbank	699	986.1	1012.5	86	61	73.2	-.4	94	18+	56	28	5	0	57	63	.00	-.02	.00	0	0	.0	0	6.6	ESE	*16	ESE	9	25	6	0	1.5	--
Eureka (U)	43	1014.2	1016.6	60	51	55.4	-1.6	64	23+	47	28	0	0	--	--	.04	-.07	.02	3	0	.0	0	6.2	I N	29	N	15	7	10	4	6.4	51
Fresno	331	988.6	1010.3	96	61	78.5	-1.0	105	20	51	23	26	0	48	39	.00	.00	.00	0	0	.0	0	7.1	WNW	20	NW	22	29	2	0	.7	100
Los Angeles (U)	312	------	------	83	63	73.2	.3	92	2	60	31+	3	0	61	73	.00	-.02	.00	0	0	.0	0	5.4	W	18	W	2	24	6	1	2.4	84
Los Angeles	99	1009.1	1012.8	74	63	68.4	.2	80	3	59	31	0	0	62	81	.00	-.02	.00	0	0	.0	0	7.5	WSW	*15	W	31+	14	15	2	3.6	-
Long Beach	34	1011.9	1013.1	84	63	73.2	----	94	11	57	31	3	0	59	66	.00	----	.00	0	0	.0	0	6.6	WNW	*20	NW	2	22	9	0	2.8	--
Mt. Shasta (R)	3544	982.3	1013.9	85	49	67.0	1.2	99	7	34	23	12	0	--	--	.00	-.13	.00	0	0	.0	0	----	---	--	---	--	25	5	1	1.4	--
Oakland	3	1013.2	1013.6	72	54	63.2	.3	85	16	51	22	0	0	52	74	T	-.02	T	0	0	.0	0	10.3	WNW	*25	W	22	19	11	1	3.2	--
Point Arguello	367	1000.0	1013.4	64	51	57.5	----	71	11	43	23	0	0	--	--	.13	----	.04	11	0	.0	0	6.6	---	*22	WNW	16	3	5	23	8.0	-
Red Bluff	341	998.0	1010.6	97	65	81.1	.6	106	19+	55	23	26	0	42	28	.00	-.05	.00	0	0	.0	0	9.5	S	30	N	16+	27	2	2	1.2	99
Sacramento	17	1009.8	1011.0	94	57	75.5	2.3	105	19+	52	27+	23	0	51	52	.00	.00	.00	0	0	.0	0	7.4	SSW	28	SW	21	28	2	1	1.1	100
Sandberg (R)	4517	863.2	1011.5	85	63	73.9	.4	94	18+	49	23	11	0	--	--	.00	-.10	.00	0	0	.0	0	11.8	NNW	*31	N	22	31	0	0	.2	--
San Diego	19	1009.1	1012.2	78	65	71.2	.9	84	2	62	2	0	0	62	74	.00	-.05	.00	0	0	.0	0	6.7	WNW	18	S	22	22	9	0	2.8	78
San Francisco (U)	52	------	------	63	52	57.7	-1.6	72	25	50	11+	0	0	--	--	T	-.01	T	0	0	.0	0	10.6	I W	33	W	21	--	--	--	----	70
San Francisco	[illegible]	1012.9	1013.7	72	52	62.1	1.5	86	16	51	30+	0	0	52	76	T	-.01	T	0	0	.0	0	12.7	WNW	35	WNW	21	24	7	0	2.0	--
Santa Maria	238	1005.1	1014.0	70	52	60.7	-1.7	81	11	45	23	0	0	53	80	T	-.03	T	0	0	.0	0	6.3	WNW	*25	W	1	22	9	0	3.3	--
COLORADO																																
Alamosa	7536	775.1	1015.8	82	45	63.6	1.8	87	8+	35	18	0	0	--	--	.71	-.39	.63	4	5	.0	0	----	---	--	---	--	14	15	2	3.5	--
Colorado Springs	6173	813.4	1012.9	86	54	70.0	.3	94	27+	43	18	13	0	43	45	.78	-1.91	.54	7	11	.0	0	10.1	NE	*30	N	28+	15	14	2	3.8	--
Denver	5292	838.8	1010.9	90	57	73.4	2.1	98	31+	44	17	22	0	40	36	.06	-1.37	.03	3	4	.0	0	8.8	SSW	33	W	17	16	11	4	3.8	77
Grand Junction	4849	858.8	1010.5	92	61	76.6	1.0	99	3	45	17	20	0	31	23	.47	-.73	.38	4	1	.0	0	10.7	ESE	42	N	10	21	8	2	2.8	93
Pueblo	4639	856.8	1011.8	92	59	75.2	1.9	101	6	48	18	23	0	45	41	.08	-1.70	.06	2	2	.0	0	8.3	ESE	54	NE	7	18	11	2	3.5	85
CONNECTICUT																																
Bridgeport	7	1016.6	1016.6	80	65	72.6	.9	91	3	56	25	1	0	63	76	1.51	-2.92	.35	11	4	.0	0	9.4	WSW	24	NE	24+	9	5	17	6.4	-
Hartford	169	1010.6	1016.6	81	60	70.7	-.7	92	29	46	26+	2	0	62	79	3.00	-.54	1.30	8	2	.0	0	6.5	S	19	NW	8	7	8	16	6.5	62
New Haven	6	1016.8	------	79	63	70.8	1.0	88	3	51	26	0	0	--	--	2.06	-2.05	.63	10	2	.0	0	6.8	---	19	N	19	9	6	16	6.5	82
DELAWARE																																
Wilmington	78	1014.0	1017.3	83	66	74.9	1.1	91	30+	55	26	2	0	67	80	5.08	-.20	1.24	11	7	.0	0	7.2	S	40	NNE	31+	6	10	15	6.5	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	88	69	78.7	2.9	95	30+	59	26	15	0	--	--	4.19	-.30	1.14	13	--	--	--	----	---	--	---	--	--	--	--	----	--
Wash. Nat'l. AP	14	1012.6	1017.0	87	70	78.5	3.1	94	30+	61	26	9	0	68	76	4.13	-.62	1.01	13	[illegible]	.0	0	[illegible]	S	40	WSW	4	7	10	14	6.6	62
FLORIDA																																
Apalachicola (U)	13	1015.4	------	87	75	81.2	-.1	93	29	70	25	6	0	--	--	5.74	-1.74	2.09	14	13	.0	0	6.5	---	35	E	30	10	10	11	5.5	64
Daytona Beach	31	1016.1	1019.1	88	73	80.2	-.7	91	10	69	19	5	0	74	84	6.84	1.02	2.60	14	15	.0	0	7.7	E	*30	WNW	23	6	14	11	5.9	--
Fort Myers	15	1016.7	------	91	75	83.2	.7	94	9+	72	30+	29	0	--	--	5.66	-2.15	.99	16	20	.0	0	7.4	---	*29	ESE	30+	2	16	13	6.7	--
Jacksonville	24	1017.2	1018.6	91	73	81.9	.1	96	21+	68	20+	18	0	73	80	6.50	.07	1.58	13	13	.0	0	6.9	SW	27	NE	17	5	17	9	5.9	51
Key West	5	1015.6	1016.6	89	78	83.2	-.7	92	24+	70	30	10	0	75	77	9.21	4.54	2.51	19	14	.0	0	12.5	ESE	30	E	27	4	13	14	6.4	73
Lakeland (U)	214	------	------	90	74	81.7	.0	95	20	70	26+	21	0	--	--	3.98	-3.15	1.48	14	21	.0	0	5.7	---	--	---	--	4	16	11	6.5	62
Miami	7	1016.0	1017.3	89	77	83.3	.4	91	23+	74	31+	19	0	74	77	4.15	-2.46	.91	15	13	.0	0	8.7	E	28	SSE	30	3	17	11	6.6	--
Miami Beach	9	------	------	87	79	83.2	.2	89	24+	73	14	0	0	--	--	5.06	.67	1.26	15	--	.0	0	----	- -	¢36	¢ E	¢6	¢3	¢17	¢11	¢6.3	¢67
Orlando	106	1014.1	1018.6	93	74	83.3	.8	98	9	68	19	28	0	73	78	3.20	-3.67	.78	13	13	.0	0	6.9	E	*28	SW	11	4	17	10	6.1	--
Pensacola (U)	13	------	------	87	75	81.2	.0	95	30	72	26	3	0	--	--	7.75	.32	1.71	17	8	.0	0	+8.6	---	28	NW	22	--	--	--	----	58
Tallahassee	64	1015.2	1017.9	89	71	80.1	-.8	93	29	67	25	16	0	72	81	5.07	-1.85	1.86	16	15	.0	0	4.2	S	*23	W	22+	4	15	12	6.5	--
Tampa	19	1016.6	1018.2	92	75	83.0	1.0	97	28+	70	19	26	0	72	77	7.72	-.34	4.32	11	16	.0	0	8.5	ENE	*29	SSE	26	4	16	11	6.5	49
West Palm Beach	15	1016.5	1017.7	91	76	83.2	1.0	94	23	70	26	28	0	74	77	4.76	-2.64	1.38	13	15	.0	0	9.1	ESE	*26	SSE	14	3	17	11	6.3	--
GEORGIA																																
Athens	798	990.2	1019.1	89	69	78.6	-1.1	94	30+	65	27	16	0	70	81	5.02	1.04	2.12	12	12	.0	0	5.8	SW	*24	S	5	6	15	10	6.3	--
Atlanta	975	977.4	1018.2	88	70	78.9	.3	94	30+	67	27+	8	0	69	78	5.60	1.79	2.41	10	8	.0	0	7.8	SW	*29	WNW	24+	6	14	11	6.2	59
Augusta	143	1010.9	1017.5	91	70	80.6	.8	96	8	63	19	22	0	72	80	1.98	-2.12	.69	8	10	.0	0	4.7	SW	*23	NE	24	4	13	14	6.6	
Columbus	385	1004.0	------	90	70	80.4	.2	95	30+	64	25	23	0	--	--	5.59	.66	1.32	14	14	.0	0	6.0	---	*35	NE	24	3	15	13	6.6	--
Macon	356	1004.4	1018.0	91	71	80.9	-.8	97	29	67	25	25	0	70	76	3.91	-.73	1.35	13	11	.0	0	7.0	SW	39	E	9	4	13	14	6.5	55
Rome	637	995.0	------	90	68	78.8	.0	98	1	64	30	16	0	68	77	4.06	.17	1.95	14	12	.0	0	3.2	--			--	7	13	11	6.1	--
Savannah	48	1015.7	1018.3	90	71	80.6	.2	95	9+	64	19	17	0	72	81	2.94	-3.31	.82	9	17	.0	0	7.1	SW	24	NE	15	2	20	9	6.3	63
Thomasville	283	------	------	92	72	82.0	1.4	97	13	68	25	24	0	--	--	3.28	-2.63	1.01	12	13	.0	0	-	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature								No of days				Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile			No. of days (sunrise to sunset)				
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F.	°F.	°F		°F				°F	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
HAWAII																																
Hilo	31	1014.9	1016.2	83	69	75.6	0.2	88	11	64	27	0	0	69	81	12.86	0.94	3.76	25	--	0.0	0	8.2	WSW	*25	ENE	31+	1	5	25	8.5	28
Honolulu	7	1015.6	1016.1	86	75	80.4	1.0	89	11	72	28	0	0	67	65	40	-.40	.20	5	--	.0	0	13.6	NE	30	NE	30+	2	18	11	6.7	85
Lihue	115	1011.5	1015.9	86	74	80.0	1.9	88	16	72	13+	0	0	69	73	87	-1.40	.17	18	0	.0	0	13.7	NE	25	NE	19	2	12	17	7.2	62
IDAHO																																
Boise	2812	918.4	1012.8	84	54	69.0	-3.5	98	10	38	27	11	0	42	42	.83	.62	.79	3	0	.0	0	7.6	SE	24	NW	21	22	6	3	2.2	90
Idaho Falls 46W (R)	4933	848.6	1013.9	82	45	63.5	-3.4	96	11	31	28+	9	3	--	--	1.20	.56	.80	5	3	.0	0	9.4	WSW	a28	WSW	24	--	--	--	----	--
Idaho Falls 42NW (R)	4790	------	------	83	44	63.9	-1.4	96	12+	26	29	11	2	--	--	.49	-.31	.47	2	--	---	--	6.2	SW	a23	SW	26	--	--	--	----	--
Lewiston	1413	963.1	1013.9	81	54	67.9	-5.2	101	10	43	28	9	0	--	--	1.92	1.54	1.36	6	3	.0	0	----	---	--	---	--	14	8	9	4.5	--
Pocatello	4444	862.9	1011.8	84	50	66.9	-3.2	97	11	39	29	13	0	37	37	.84	.12	.64	4	5	.0	0	11.0	WSW	36	SW	22+	20	7	4	2.8	83
ILLINOIS																																
Cairo (U)	314	1003.1	------	90	71	80.6	1.1	97	7+	64	12	15	0	--	--	2.09	-1.12	1.16	7	6	.0	0	6.4	Φ S	37	SE	6	13	11	7	4.5	85
Chicago (O'Hare)	656	991.5	1015.8	83	64	73.7	----	93	31	55	15+	4	0	64	75	3.46	----	1.66	9	5	.0	0	10.3	SSW	*46	NW	3	11	11	9	5.5	--
Chicago (Midway)	610	993.2	1015.8	85	66	75.7	3.0	96	31	58	11	5	0	63	69	1.02	-2.17	.37	8	5	.0	0	9.0	SSW	35	S	4	11	10	10	5.5	50
Moline	589	992.6	1014.6	84	64	73.8	.8	94	31	53	15+	4	0	65	76	3.97	.40	1.56	8	9	.0	0	7.3	ESE	40	NE	3	7	13	11	5.6	69
Peoria	654	993.9	1016.0	83	64	73.4	-.3	91	31+	51	11	3	0	65	77	5.32	2.33	1.88	9	8	.0	0	7.9	S	27	SW	4+	13	6	12	5.3	71
Rockford	728	988.8	1016.0	83	62	72.7	.2	92	2	52	15+	3	0	62	73	4.94	1.21	1.77	8	6	.0	0	9.5	S	*30	W	7	11	11	9	5.2	--
Springfield	589	992.2	1015.4	86	66	75.7	1.7	94	31+	55	12+	4	0	67	76	2.55	-.48	.78	8	7	.0	0	8.6	SSW	41	S	18	12	11	8	4.6	73
INDIANA																																
Evansville	383	1000.3	1016.1	88	67	77.7	1.4	95	3+	59	12	12	0	69	76	2.31	-.73	1.20	9	6	.0	0	6.5	SW	36	NW	20	11	10	10	5.2	80
Fort Wayne	801	985.8	1016.7	83	63	73.1	1.7	90	31+	52	1	2	0	63	75	2.21	-.59	1.05	8	6	.0	0	9.1	SW	40	W	14+	4	13	14	6.5	64
Indianapolis	793	986 8	1016.6	84	64	74.1	.1	89	29+	58	12	0	0	66	78	1.78	-1 74	.66	8	8	0	0	5.7	S	31	W	29	5	15	11	5.8	77
South Bend	768	988 2	1016.1	83	62	72.3	.9	91	31	54	11	2	0	63	76	3.26	.01	2.31	7	5	.0	0	8 0	SSW	*44	NW	3	10	11	10	5.9	--
IOWA																																
Burlington	694	990.2	1015.5	86	65	75.0	.6	95	31+	54	11	6	0	64	74	2.54	-.77	2.03	7	6	.0	0	9.2	SSW	60	W	7	12	12	7	4.7	90
Des Moines	948	973.2	1015.0	85	65	74.9	1.1	98	3	56	15	3	0	66	79	6.78	3.02	1.74	10	12	.0	0	9.3	S	60	SSE	24	12	11	8	5.1	79
Dubuque	1065	990.2	1015.7	81	61	71.3	.6	90	3	46	15	1	0	62	71	3.93	.33	1 50	11	7	.0	0	----	---	--	---	--	9	10	12	5.5	--
Sioux City	1094	972.6	1013.0	85	64	74.4	.8	101	2	55	26+	7	0	64	74	5.78	3.06	3.26	7	8	.0	0	10.6	SE	33	N	5	12	12	7	4.7	73
Waterloo	870	982.7	1014.3	84	62	72.8	1.1	93	3+	50	15	3	0	64	76	5.12	1.46	1.49	11	12	.0	0	6.9	S	*33	NNW	28	12	5	14	5.5	--
KANSAS																																
Concordia (U)	1375	964.1	------	89	67	77.8	-.7	104	5	58	19+	18	0	--	68	5.53	2.33	2.20	9	9	.0	0	7.1	Φ SE	31	NW	28	22	6	3	2.9	84
Dodge City	2594	926.9	1012.4	92	65	78.7	1	104	2	53	18	22	0	58	56	1.80	-.88	.47	8	9	.0	0	16.3	SSE	46	N	12	16	12	3	3.9	75
Goodland	3645	887.6	1011.6	92	59	75.7	1.8	106	5	44	19	20	0	50	48	.29	-2.26	.14	3	4	.0	0	13.8	SSE	*37	SE	22	19	10	2	3.2	--
Topeka	877	978.7	1013.8	90	67	78.2	.6	101	5	53	11	16	0	67	71	3.70	-.96	2.40	8	11	.0	0	11.7	SSW	34	S	25	10	14	7	4.6	76
Wichita	1321	965.5	1013.2	91	68	79.3	-.6	102	5	59	11	18	0	66	69	7.91	4.95	3.10	10	12	.0	0	13.8	S	36	NE	25	16	11	4	4.0	69
KENTUCKY																																
Lexington	979	982.2	1017.6	86	67	76.7	1 7	95	2	60	11	4	0	68	79	4.14	.77	1.36	10	10	.0	0	6.9	S	--	---	--	9	9	13	6.1	--
Louisville	474	997.4	1016 4	87	67	76.9	.8	94	2	58	13	7	0	66	74	1.79	-1.27	.61	6	9	.0	0	4.6	S	29	W	20	10	10	11	5.5	56
LOUISIANA																																
Alexandria	107	1012.2	1016.4	89	71	80.0	----	94	8+	68	27+	14	0	72	84	6.09	----	1.22	17	17	.0	0	4.5	S	--	---	--	2	14	15	6.8	--
Baton Rouge	64	1014.2	1017.1	88	73	80.3	-.4	93	6+	69	30	13	0	74	88	9.37	3.50	2.28	17	21	.0	0	7.1	SE	--	---	--	1	10	20	8.0	--
Lake Charles	12	1014.6	1015.8	88	73	80.3	-2.0	93	8	70	28	15	0	73	83	6.25	1.59	1.93	17	18	.0	0	2.2	E	*18	SSW	28	1	13	17	7.6	--
New Orleans (U)	9	------	------	89	76	82.6	-.8	93	30+	73	12+	14	0	--	80	6.21	-.20	1.67	16	17	.0	0	5.1	---	19	S	6	3	21	7	6.3	48
New Orleans	3	1014.6	1016.7	89	74	81.3	-.9	93	31	69	30	14	0	75	86	6.51	.87	2.25	18	16	.0	0	6.2	S	*23	SSE	16	1	17	13	7.0	--
Shreveport	252	1007.1	1016.1	92	72	82.1	-2.1	96	9+	69	13+	25	0	71	75	4.99	2.62	3.67	10	8	.0	0	7.9	SSE	--	---	--	8	10	13	6.0	69
MAINE																																
Caribou	624	991.6	1014.6	77	51	63.9	2.1	92	19	41	17+	2	0	52	70	2.82	-.71	1.60	9	4	.0	0	9.9	SW	*58	W	29	9	16	6	4.9	--
Portland	61	1012.2	1016.4	79	54	66.2	-.2	88	29	44	26	0	0	59	78	1.32	-1.27	.50	9	5	.0	0	8.4	S	23	SW	2	10	13	8	5.5	70
MARYLAND																																
Baltimore (U)	14	------	------	88	72	79.9	3.5	98	30	62	26	14	0	--	--	3.11	-1.27	.87	10	--	---	--	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1012.4	1017 2	86	68	76.9	2.5	95	30	56	26	8	0	69	82	4.30	-.08	1.47	11	8	.0	0	7.9	W	40	NW	3	7	13	11	5.9	66
Frederick	294	------	------	85	64	74.8	.2	93	30	53	26+	7	0	--	--	4.71	.68	1.65	10	--	.0	0	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.(R)	629	992.9	------	78	60	68.9	----	90	29	49	25	1	0	--	79	1.62	-2.46	.90	9	--	.0	0	12.2	SW	30	WSW	21	--	--	--	----	56
Boston	15	1015.0	------	80	64	72.1	.6	93	29	55	25	2	0	--	--	1.64	-1.59	.68	7	1	.0	0	10.4	---	28	WSW	2	10	7	14	6.0	66
Nantucket	43	1016.3	1017.0	72	61	66.4	-.7	80	28+	52	25	0	0	62	88	.96	-2.47	.66	7	1	.0	0	10.4	SW	24	N	24	3	9	19	7.7	49
Pittsfield	1170	------	------	76	55	65.6	- 2	86	29	41	25	0	0	--	--	3.04	-1.27	1.17	10	--	.0	0	----	---	--	---	--	--	--	--	----	--
Worcester	986	980 7	1017.3	76	59	67.3	-.8	86	29	51	25	0	0	57	72	3.58	.17	2.02	11	4	.0	0	7.1	WSW	*18	SW	29	8	11	12	6.0	--
MICHIGAN																																
Alpena	689	991.9	------	77	48	62.9	-2.9	89	31+	35	16	0	0	56	70	1.85	-1.28	.58	7	4	.0	0	5.9	ΦSE	25	NW	31	13	12	6	4.8	66
Detroit(City AP)	619	990.5	1017.0	82	62	71.9	.6	90	28	55	16	1	0	61	71	2.50	-.12	.96	8	3	.0	0	7.8	SW	33	W	14	10	10	11	5.6	63
Detroit (M. Wayne Co.)	630	992.9	1016.7	81	60	70.9	----	88	26	54	25+	0	0	61	75	2.37	----	.73	10	6	.0	0	8.3	SW	--	---	--	9	10	12	5.6	--
Detroit (Willow Run)	722	988.5	1016.6	83	61	71.8	7	88	31+	55	25+	0	0	61	72	2.43	-.28	.76	9	5	.0	0	9.7	SW	*23	ENE	23	11	10	10	5.6	--
Escanaba (U)	594	993.2	------	75	59	67.1	2.2	85	12	42	15	0	0	--	76	3.78	.89	2.55	8	7	.0	0	8.8	---	26	N	13+	12	13	6	4.7	60
Flint	761	989.5	1017.2	80	57	68.2	-.6	88	31+	46	11	0	0	59	76	3.36	.59	1.52	6	7	.0	0	7.1	SW	*37	NW	14	10	12	9	5.4	--
Grand Rapids	681	991.5	1016.5	82	59	70.6	.9	90	31	49	16	1	0	60	73	2.17	-.41	.98	6	5	.0	0	7.6	ENE	24	S	7	12	12	7	5.3	63
Lansing	852	984.8	1016.7	81	58	69.3	.3	89	31	46	16	0	0	60	76	2.98	.30	1.28	9	6	.0	0	9.8	S	37	N	3	11	9	11	5.5	68
Marquette (U)	677	988.2	------	76	57	66.4	1.1	89	31	45	15	0	0	--	70	3.61	.90	2.51	4	2	.0	0	7.8	D S	52	SW	27	9	15	7	5.5	75
Muskegon	627	993.2	1016.2	81	60	70.4	2.0	90	19	51	16	1	0	62	77	2.86	.20	.87	8	6	.0	0	7.8	SSW	*23	SW	7	13	12	6	4.4	--
Sault Ste. Marie	721	993.6	1016.2	76	54	64.6	1.7	85	18	45	27+	0	0	56	76	2.57	-.05	2.09	10	5	.0	0	7.8	NW	*25	WNW	7	9	14	8	5.3	71
MINNESOTA																																
Duluth	1409	973.2	1014.4	75	55	64.8	.0	86	12	42	15+	0	0	57	79	4.10	.67	2.28	10	5	.0	0	11.0	E	38	E	22	7	10	14	6.4	60
Intern'l Falls	1179	971.9	1012.8	79	53	65.9	3.1	90	12	37	14	1	0	55	72	2.49	-.83	1.52	12	7	.0	0	7.6	S	*25	S	17	4	16	11	6.1	--
Minneapolis	830	980.4	1013.6	83	62	72.1	.6	94	2	47	15	3	0	60	70	3.99	1.20	1.51	11	6	.0	0	8.5	SSE	33	S	3	9	9	13	5.6	57
Rochester	1017	977.7	1014.5	81	61	70.7	1.3	93	31	43	15	2	0	62	76	2.97	-.51	.73	10	7	.0	0	9.3	SSE	--	---	--	10	10	11	5.6	--
St. Cloud	1034	975.6	1013.1	82	59	70.4	2.3	91	12	46	29+	1	0	59	72	4.47	1.59	3.60	11	6	.0	0	----	---	--	---	--	9	8	14	5.6	--
MISSISSIPPI																																
Jackson	305	1005.1	1017.1	90	71	80.5	-.9	95	9+	68	12	21	0	71	81	10.23	6.95	3.68	16	17	.0	0	3.7	SE	29	SW	29	5	12	14	6.8	49
Meridian	292	1003.3	1017.4	90	70	80.3	-.2	96	9+	68	30+	23	0	72	85	8.55	4.83	2.01	15	12	.0	0	5.0	SSW	*21	W	10+	7	11	13	6.5	--
Vicksburg (U)	234	1007.6	------	88	72	80.1	-1.4	94	1	67	12	15	0	--	--	16.58	13.87	6.70	15	11	.0	0	6.1	---	36	S	28	8	9	14	6.1	53
MISSOURI																																
Columbia	778	986.1	1014 3	91	67	79.0	2.8	97	31+	54	11	20	0	66	68	.27	-3.62	.13	4	6	.0	0	9.0	SSE	24	SE	23+	14	9	8	4.8	71
Kansas City	741	980.0	1014.1	90	71	80.2	1.2	100	5	61	11	16	0	66	63	3.12	-.77	1.11	9	9	.0	0	8.3	SSW	56	SW	16	12	14	5	4.8	71
St. Joseph	809	980.0	------	89	67	77.8	-.3	97	5	57	11	16	0	--	--	5.46	1.73	3.31	10	11	.0	0	8.7	S	*29	N	7	15	12	4	4.0	--
St. Louis (RFC)	465	-----	------	88	71	79.3	.7	96	3+	63	11	12	0	--	--	1.89	-1.88	1.13	6	--	.0	0	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure: Station ∅	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No of days: Max. 90° F or above	No of days: Min 32° F. or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No of days: .01 inch or more	No of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max depth on ground	Wind: Average hourly speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb.	°F	°F	°F.	°F.	°F		°F				°F	%	In	In	In			In	In	M p h		M p h			0–3	4–7	8–10	0–10	%
MISSOURI (Cont'd.)																																
St. Louis	552	995.3	1015.6	88	70	79.1	1.4	97	31+	60	11	12	0	67	70	0.98	-2.57	0.52	8	4	0.0	0	6.1	S	29	S	6	7	17	7	5.5	74
Springfield	1265	968.8	1015.8	89	66	77.4	.9	96	31	55	12+	19	0	66	73	2.52	-1.49	1.52	6	7	.0	0	9.9	SSE	31	NW	9	13	11	6	4.5	86
MONTANA																																
Billings	3567	889.6	1011.2	84	56	69.8	-1.2	98	11	42	28	10	0	43	43	1.95	1.07	.77	8	7	.0	0	10.0	SW	44	NW	1	16	9	6	4.0	75
Butte	5530	830.3	1015.0	73	41	57.3	-2.7	88	21+	26	28	0	1	36	50	2.04	.92	.75	10	6	T	0	8.7	NW	*38	SW	24	11	11	9	4.8	--
Glasgow	2277	938.0	1011.2	82	55	68.6	-.3	96	19	42	28	4	0	45	49	.95	-.40	.29	10	7	0	0	----	---	--	---	--	8	14	9	5.4	--
Great Falls	3664	887.6	1012.3	78	53	65.5	-1.6	94	11	43	23+	5	0	39	44	2.66	1.46	1.14	10	6	.0	0	10.2	SW	47	W	29	11	9	11	5.1	71
Havre (U)	2488	924.1	1011.9	81	53	66.9	-1.1	96	19+	44	26+	7	0	--	--	1.98	.92	.99	10	8	0	0	8.2	SW	36	W	29	8	10	13	5.7	68
Helena	3893	873.0	1013.1	78	49	63.4	-2.4	93	21+	36	24	4	0	40	49	2.12	1.19	.98	10	8	0	0	8.9	WSW	45	SW	11	15	10	6	4.3	79
Kalispell	2965	------	------	76	46	61.0	-3.0	92	12+	37	15	3	0	--	--	2.31	1.20	.96	11	6	0	0	----	-	--	---	--	8	7	16	6.3	--
Miles City	2629	928.2	1011.1	86	57	71.7	-.6	98	4	43	28	13	0	47	47	.78	-.32	.29	10	8	0	0	10.5	W	*38	SW	15	16	9	6	4.3	--
Missoula	3200	901.8	1015.2	78	47	62.4	-3.7	96	11	32	28	7	1	43	55	1.69	.91	.75	8	3	.0	0	7.8	NW	30	NW	21	10	8	13	5.8	59
NEBRASKA																																
Grand Island	1841	947.9	1012.6	87	61	73.8	-2.4	97	1	50	20	14	0	62	69	2.60	.21	1.28	6	8	0	0	11.2	S	--	---	--	15	7	9	4.2	--
Lincoln (U)	1166	------	------	87	66	76.5	-.4	96	2	58	26	16	0	--	--	6.29	3.21	1.89	12	13	0	0	10.4	S	53	N	5	12	12	7	4.5	83
Norfolk	1544	957.7	1012.1	86	62	73.9	.0	99	2	51	11	13	0	61	66	3.78	.91	2.39	8	9	.0	0	----	---	--	---	--	10	13	8	4.7	--
North Platte	2779	914.7	1011.0	89	59	74.1	.4	103	2	45	19	15	0	55	58	1.14	-.97	.68	6	6	0	0	11.9	SSE	42	SE	16	13	13	5	3.9	76
Omaha	978	973.9	1013.4	86	65	75.6	-.1	98	3	58	26+	8	0	66	73	7.12	4.00	2.10	10	9	0	0	10.4	SSE	55	N	5	13	12	6	4.4	69
Omaha N.Omaha AP	1323	966.1	------	83	64	73.5	-.3	94	3	57	28	5	0	--	--	11.77	8.65	3.15	10	11	0	0	----	---	--	---	--	12	11	8	5.0	--
Scottsbluff	3950	878.4	1011.2	88	55	71.1	-1.3	101	21+	44	24+	15	0	49	51	1.20	-.02	.85	6	4	.0	0	11.4	ESE	*41	NNW	16	15	11	5	3.7	--
Valentine	2587	922.1	------	88	57	72.9	.7	103	31+	45	26	15	0	--	57	4.08	2.08	3.19	7	8	0	0	12.2	SSE	38	S	15+	17	11	3	3.4	82
NEVADA																																
Elko	5075	844.9	1012.9	87	44	65.2	-2.4	98	12+	25	23	17	3	29	28	.32	.03	.15	4	3	0	0	6.4	SW	*31	S	13	24	6	1	1.9	-
Ely	6257	810.4	1011.9	86	44	65.4	-.9	95	12+	24	23	13	3	28	27	.19	-.70	.12	3	7	0	0	10.8	S	42	N	8	20	9	2	2.5	93
Las Vegas	2162	843.8	1007.2	103	74	88.3	-.1	111	13+	59	23	31	0	35	17	T	-.53	T	0	2	0	0	11.3	SW	*29	SW	21+	24	6	1	1.9	92
Reno	4404	861.8	1013.1	89	42	65.5	-1.9	98	19+	30	23	16	2	38	40	T	-.23	T	0	0	.0	0	5.4	NE	23	NW	14	22	8	1	2.0	93
Winnemucca	4299	867.6	1012.9	89	44	66.7	-3.0	101	12+	28	23	17	3	30	28	.08	-.10	T	1	1	0	0	7.3	W	51	W	22	23	5	3	2.2	89
NEW HAMPSHIRE																																
Concord	339	1006.0	1016.9	81	55	68.0	1.5	91	29	41	25	1	0	57	74	2.57	-.53	1.22	11	5	0	0	5.2	NNW	22	NW	23	9	10	12	5.5	63
Mt. Washington Obs.	6262	811.9	------	55	42	48.5	.8	64	18	31	25+	0	3	--	82	3.77	-2.38	1.40	14	1	0	0	22.8	W	*71	W	2	9	7	15	6.0	51
NEW JERSEY																																
Atlantic City (U)	30	------	------	79	69	73.8	.7	91	3	62	26+	1	0	--	--	3.93	-.79	1.71	--	--	---	--	11.6	---	27	NE	18	--	--	--	----	--
Atlantic City	58	1014.5	------	83	67	74.8	1.9	93	30+	53	26	5	0	--	--	2.36	-2.22	.65	8	7	.0	0	10.3	---	23	NW	19+	3	11	17	7.0	46
Newark	11	1015.6	1017.0	84	66	75.1	2.0	94	29	58	26+	8	0	65	72	4.61	.42	2.25	9	6	0	0	8.4	SW	*23	N	19	7	7	17	6.4	--
Trenton (U)	56	1009.1	------	83	66	74.5	1.3	92	29+	55	26	7	0	--	--	2.89	-1.70	1.07	10	6	.0	0	7.1	---	24	S	22	4	12	15	6.7	62
NEW MEXICO																																
Albuquerque	5310	849.3	1010.2	92	65	78.4	1.5	97	3+	59	29+	25	0	47	38	.78	-.60	.35	5	10	.0	0	7.6	N	47	E	21	21	8	2	2.9	86
Clayton	4969	846.6	1011.5	88	59	73.4	.5	95	2	51	18	15	0	--	--	1.38	-.63	.67	7	12	0	0	----	---	--	---	--	19	7	5	3.2	--
Raton	6379	808.3	1012.5	86	52	69.0	1.6	92	6	46	12	5	0	--	--	2.24	-.25	1.47	9	12	0	0	----	---	--	---	--	15	13	3	3.5	--
Roswell	3612	892.7	1010.5	94	64	78.9	.9	100	20	54	14	26	0	58	52	.16	-1.29	.16	1	3	0	0	8.3	---	30	N	11	16	13	2	3.5	--
Silver City	5371	834.7	1009.7	90	62	76.4	----	98	2	58	23+	20	0	--	--	1.76	----	.65	11	19	0	0	----	---	--	---	--	12	15	4	4.2	--
NEW YORK																																
Albany	277	1013.9	1016.7	81	59	69.9	.3	92	29	44	25	1	0	61	76	3.20	.31	1.39	9	5	.0	0	7.0	S	26	NW	8	8	8	15	6.1	62
Binghamton	1590	958.8	1017.4	77	59	68.0	1.4	86	29	46	25	0	0	59	76	4.27	.61	1.36	13	5	.0	0	7.1	WSW	30	W	21	5	7	19	6.9	57
Buffalo	693	989.2	1017.6	80	58	69.0	.1	87	31+	47	25	0	0	58	71	3.75	1.21	.97	10	4	0	0	7.9	S	25	SW	14+	12	10	9	4.9	69
New York (U)	10	1015.4	------	80	66	73.2	.0	89	28	59	26+	0	0	--	75	6.04	1.70	3.47	10	1	0	0	9.3	S	49	NW	21	7	13	11	6.3	76
New York	19	1015.0	1017.1	82	68	75.1	.7	93	30	61	26	4	0	64	73	5.88	1.61	2.07	11	8	0	0	10.9	NE	38	N	23	8	7	16	6.3	--
Rochester	543	997.8	1017.3	79	57	67.7	-1.2	89	29	43	25	0	0	58	74	4.05	1.57	1.52	9	4	0	0	7.9	SSW	31	W	7	11	11	9	5.3	77
Schenectady	217	------	------	81	60	70.6	.2	92	29	49	25	1	0	--	--	2.71	-.56	1.07	11	4	0	0	----	---	--	---	--	15	12	4	3.7	--
Syracuse	424	994.7	1016.6	80	57	68.7	-1.6	91	29	45	25	1	0	58	70	2.69	-.40	1.03	10	4	0	0	7.9	WSW	33	W	8	10	10	11	5.5	62
NORTH CAROLINA																																
Asheville (U)	2203	940.3	------	84	64	74.1	1.4	89	30+	59	26	0	0	--	--	7.24	3.66	1.91	17	17	.0	0	5.1	---	27	W	7	4	16	11	6.4	45
Cape Hatteras(R)	7	1016.3	1017.1	85	73	78.9	.6	91	9	63	20	1	0	75	88	3.93	-1.90	1.37	11	8	0	0	9.7	SW	40	NE	25	6	12	13	6.4	56
Charlotte	725	990.1	1017.9	90	69	79.7	2.4	97	8+	63	19	17	0	69	77	3.25	-1.11	1.16	9	15	.0	0	8.0	SW	34	NW	7	3	15	13	6.7	62
Greensboro	891	987.6	1018.7	87	68	77.2	1.4	94	8+	61	18	14	0	68	79	3.78	-.93	2.17	13	13	0	0	6.6	WSW	28	NW	3	7	12	12	6.3	69
Raleigh	433	1004.0	1017.8	87	68	77.6	.4	94	8+	61	18	14	0	70	82	5.43	.47	1.36	13	13	0	0	6.4	SSW	*29	NW	8	7	13	11	6.0	59
Wilmington	30	1016.3	1017.7	88	71	79.7	.4	95	8	64	19	17	0	73	85	4.53	-1.87	2.25	11	7	0	0	7.9	SSW	28	SW	22	4	19	8	6.3	61
Winston-Salem	967	983.1	1018.1	87	68	77.6	1.4	94	7+	62	18	13	0	67	76	3.22	-.88	.78	11	14	.0	0	7.5	SW	*29	WSW	3	5	16	10	6.2	--
NORTH DAKOTA																																
Bismarck	1650	951.9	1011.4	86	56	70.7	1.4	106	22	44	14	9	0	50	52	3.81	2.31	1.13	11	9	0	0	11.3	WNW	47	SE	5	11	10	10	5.2	78
Devils Lake (U)	1471	958.7	------	81	56	68.3	1.5	95	22+	43	14	6	0	--	62	3.16	.99	1.25	9	6	.0	0	7.4	ESE	30	SE	16	11	10	10	5.1	60
Fargo	895	978.3	1012.3	83	58	70.6	1.5	94	12	40	14	8	0	59	70	3.91	1.18	1.68	10	7	0	0	11.4	SSE	50	NW	6	13	6	12	5.4	67
Williston (U)	1877	944.8	1011.4	83	56	69.6	1.5	97	1	46	28	6	0	51	54	2.98	1.57	1.82	9	7	.0	0	6.9	ENE	34	SE	22	7	13	11	5.8	69
OHIO																																
Akron	1210	980.1	1017.8	82	61	71.5	.9	87	29+	50	1	0	0	62	76	2.60	-.66	1.20	10	9	.0	0	7.6	SW	--	---	--	7	12	12	6.0	--
Cincinnati Obs.	761	------	------	86	67	76.7	1.9	91	29+	58	1	5	0	--	--	5.61	2.23	3.48	7	6	.0	0	4.1	---	26	E	19	--	--	--	----	74
Cincinnati	869	985.5	1017.3	87	66	76.3	2.8	92	19+	59	1	5	0	66	74	5.21	1.87	2.22	12	8	0	0	6.3	SSW	25	SSW	19	7	11	13	6.1	--
Cleveland	787	989.2	1017.0	80	60	69.8	-2.1	86	29+	46	25	0	0	62	79	6.95	4.31	1.89	8	5	.0	0	8.3	S	*28	W	29+	8	12	11	5.8	59
Columbus (U)	724	------	------	85	67	76.1	2.3	91	2	58	1	4	0	--	--	3.21	.20	1.32	9	9	0	0	----	---	--	--	--	--	-	--	----	--
Columbus	815	987.0	1017.2	85	64	74.9	2.5	91	29+	52	1	5	0	65	75	2.48	-.73	1.11	9	9	0	0	6.0	SSW	30	SW	20+	4	16	11	6.3	78
Dayton	1002	981.0	1016.9	85	65	75.3	2.4	91	2	58	12	3	0	64	72	1.89	-.97	.42	11	8	0	0	7.3	SSW	34	NW	7+	7	13	11	6.0	75
Mansfield	1296	------	------	82	62	71.8	----	87	29+	54	1	0	0	--	--	2.75	----	.98	7	5	.0	0	----	---	--	---	--	8	12	11	6.2	--
Sandusky (U)	603	995.1	------	82	65	73.5	.7	91	28+	55	1	4	0	--	--	1.11	1.30	1.25	9	6	0	0	6.3	---	33	NW	14	10	14	7	4.9	79
Toledo	676	991.6	1017.0	83	60	71.6	.6	89	18+	49	1	0	0	63	76	2.12	-.57	.69	8	5	0	0	5.6	SW	26	NW	7	8	13	10	5.6	75
Youngstown	1178	975.1	1017.4	80	60	69.9	-.5	87	29+	49	1	0	0	61	78	4.63	1.17	1.04	10	7	0	0	7.3	SW	*21	S	21	6	11	14	6.4	-
OKLAHOMA																																
Oklahoma City	1280	971.9	1014.5	89	69	79.3	-2.7	99	4	59	11	14	0	67	71	2.89	.39	1.25	8	7	0	0	12.5	SSE	49	NE	26	15	12	4	4.0	85
Tulsa	672	990.5	1014.7	90	69	79.7	-2.2	96	7+	58	12	19	0	70	77	1.87	-1.36	.82	5	4	.0	0	7.7	SE	46	E	26	12	12	7	4.2	69
OREGON																																
Astoria	8	1017.3	1017.8	66	53	59.8	-2.0	77	6	44	22	0	0	54	83	1.84	.39	.59	15	1	0	0	10.2	NNW	*23	NNW	12	2	10	19	7.8	--
Burns (U)	4140	873.4	1014.7	81	46	63.5	-3.7	95	11+	32	28+	9	3	37	40	.26	-.01	.05	3	1	T	T	---	---	--	---	---	19	9	3	2.9	--
Eugene	361	1003.4	1016.9	78	50	63.8	-2.2	98	8	40	27	4	0	--	--	.17	.09	.19	6	0	0	0	9.2	---	*28	N	17	15	9	7	4.3	--
Meacham	4050	------	------	70	47	58.6	-4.0	89	9	35	28	0	0	--	--	1.52	1.01	.49	8	1	0	0	---	---	--	---	-	17	4	10	4.0	--
Medford	1312	968.2	1015.2	88	52	70.0	-1.1	104	8+	41	27	14	0	46	48	.03	-.16	.03	1	0	0	0	5.6	WNW	*22	WNW	23	20	10	1	2.2	--
Pendleton	1492	961.4	1014.2	83	56	69.1	-3.6	98	10	43	28	9	0	45	45	.72	.39	.35	5	1	0	0	12.0	SE	*40	WNW	2	16	10	5	3.5	--
Portland	21	1011.2	1016.5	76	55	65.4	-1.9	100	8	47	28	4	0	51	63	1.00	.39	.32	9	0	0	0	7.3	WNW	26	SW	21	5	14	12	6.3	53
Roseburg	505	998.0	1016.3	82	51	66.8	.0	103	7	42	28+	7	0	--	--	.67	.35	.45	6	0	0	0	5.7	N	18	N	16	17	7	7	3.7	80
Salem	195	1010.2	1017.4	79	51	64.8	-2.2	104	8	42	20+	3	0	52	68	.65	.16	.34	6	0	0	0	6.3	N	*23	N	23	12	9	10	5.0	--
Sexton Summit(R)	3836	885.2	1014.6	73	50	61.3	-2.4	93	8	39	27+	3	0	--	--	.33	.04	.29	2	0	0	0	11.9	N	-	---	--	23	4	4	2.5	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

AUGUST 1960

State and station		Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No of days							No. of days		Snow, Sleet				Fastest mile							
	Elevation (ground)	ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb.	°F.	°F	°F.	°F.	°F		°F				°F	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
PACIFIC AREA																																
Canton Island	8	1009.1	1009.5	90	79	84.4	0.2	92	19+	74	21	25	0	73	73	1.36	-1.04	0.72	5	0	0.0	0	14.4	E	24	E	5	0	0	31	10.0	--
Guam (R)	361	------	------	86	73	79.2	.0	88	28+	70	27+	0	0	--	--	14.82	.32	3.37	26	4	.0	0	4.8	Φ W	21	SW	20	--	--	--	----	28
Johnston Is.	7	1012.9	1013.5	86	77	81.5	----	88	31	74	8+	0	0	73	76	1.67	----	.76	17	0	.0	0	13.5	E	48	E	30	0	16	15	7.4	84
Kona (R)	91	1006.1	1009.9	88	76	82.1	1.1	92	21	72	30+	7	0	76	84	11.36	-3.49	2.15	20	3	.0	0	4.8	S	26	SE	26	0	1	30	10.0	45
Kwajalein	8	1013.9	1014.2	87	77	81.8	----	89	29+	74	31+	0	0	75	80	12.25	----	2.63	25	0	.0	0	9.9	ENE	28	NE	1	1	5	25	8.6	--
Majuro	10	1009.8	1010.1	86	77	81.2	----	88	12	73	25+	0	0	--	--	14.59	----	2.31	21	0	.0	0	7.4	E	28	SW	1	--	--	--	----	--
Ponape (R)	123	1005.1	1010.4	87	73	79.8	-.2	89	31+	70	31	0	0	75	89	16.02	.65	2.15	29	1	.0	0	2.5	S	19	S	10	1	[illegible]	28	9.1	56
Truk, Moen Is.	5	1009.8	1010.1	87	75	81.3	1.0	90	25	71	21	1	0	76	84	13.19	.59	2.76	25	1	.0	0	4.5	S	32	N	17	0	6	25	8.9	66
Wake Island	11	1013.2	1013.6	88	78	83.0	.5	90	31+	74	22+	6	0	74	76	3.20	-5.70	1.52	17	0	.0	0	13.2	ENE	*26	ENE	[illegible]	6	15	10	6.1	--
Yap	7	1007.5	1009.5	87	75	80.9	-.7	90	27+	71	19	2	0	76	85	11.96	-3.97	2.75	20	0	.0	0	4.0	SW	20	W	19	0	2	29	9.6	37
PENNSYLVANIA																																
Allentown	376	1003.4	1017.5	82	64	72.7	.9	90	29	52	26	1	0	65	80	6.31	1.82	1.89	11	7	.0	0	6.1	SSW	*24	WSW	8	[illegible]	12	13	6.3	--
Erie	732	------	1017.1	79	61	69.9	.9	88	29	50	1	0	0	61	74	2.03	-.45	.93	9	9	.0	0	9.3	SSE	*32	SSW	7	11	[illegible]	11	5.2	--
Harrisburg	335	1003.3	1017.0	85	66	75.0	2.0	92	29+	53	25	4	0	65	74	1.85	-1.49	.70	13	7	.0	0	4.5	WSW	23	N	9	7	7	17	6.7	58
Philadelphia (U)	35	------	------	84	68	76.0	.8	94	30	60	17	6	0	--	--	----	----	----	--	--	---	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1012.3	1016.8	83	66	74.5	.5	91	30	54	26	3	0	64	76	3.19	-1.39	.76	12	7	.0	0	7.3	WSW	24	NW	15	6	10	15	6.5	60
Pittsburgh (U)	749	------	------	84	66	74.9	1.8	91	29+	55	25	4	0	--	--	2.92	-.16	.94	7	--	.0	0	----	---	--	---	--	--	--	--	----	48
Pittsburgh	1151	987.4	1018.2	81	61	71.2	1.1	88	29+	51	25	0	0	62	76	3.55	.42	1.02	11	6	.0	0	6.3	WSW	*21	SW	7	6	8	17	7.0	71
Reading (U)	266	1004.7	------	84	67	75.4	2.0	92	28	55	26	4	0	--	--	3.48	-.40	1.03	9	5	.0	0	7.3	---	29	E	4	4	11	16	7.0	46
Scranton	940	983.4	1017.6	80	61	70.5	.5	90	29	48	25	1	0	62	76	3.54	-.54	.92	13	7	.0	0	7.0	SW	26	SW	29	6	11	14	6.4	60
Williamsport	527	998.5	1017.5	83	61	72.0	1.1	93	29	48	25	4	0	63	78	2.99	-.62	.84	13	8	.0	0	5.6	N	*21	N	14+	4	11	16	6.7	--
RHODE ISLAND																																
Block Island	110	1012.0	------	74	63	68.4	-.6	82	28	55	26	0	0	--	--	1.05	-2.41	.35	8	0	.0	0	----	---	--	---	--	5	6	20	7.2	--
Providence	55	1010.7	1016.9	80	62	70.8	1.4	89	29+	50	25	0	0	61	76	1.06	-2.57	.44	9	2	.0	0	9.7	S	*23	SSW	20	10	4	17	6.1	57
SOUTH CAROLINA																																
Charleston (U)	9	------	------	87	75	81.1	.1	93	9	69	26+	10	0	--	--	3.76	-2.78	1.74	9	--	.0	0	8.7	---	28	N	9	--	--	--	----	--
Charleston	41	1016.6	1018.7	89	71	80.1	.5	94	9	63	19	16	0	74	86	3.15	-3.46	.95	12	10	.0	0	7.8	SW	37	N	13	3	21	7	6.0	70
Columbia	217	1004.8	1017.5	92	71	81.1	1.1	96	29+	61	19	24	0	71	77	5.52	-.01	1.74	9	11	.0	0	5.6	SW	23	SW	5	5	16	10	6.0	65
Florence	146	1011.4	1017.3	90	71	80.1	.8	95	9+	63	19	19	0	72	81	1.46	-3.32	.45	7	8	.0	0	7.3	S	*29	SW	22	5	17	9	6.0	--
Greenville	1018	981.7	1018.0	90	70	79.9	2.7	96	9+	65	26	16	0	69	76	5.48	.68	2.03	14	13	.0	0	6.1	NE	33	W	10	5	12	14	6.4	69
Spartanburg	801	988.3	1017.9	88	69	78.5	.8	94	29	63	26	13	0	69	79	6.61	1.92	2.06	14	16	.0	0	8.1	SW	*30	WNW	21	[illegible]	14	11	6.0	--
SOUTH DAKOTA																																
Huron	1282	965.5	1011.7	88	59	73.2	.3	102	2	46	24	14	0	60	69	3.76	1.78	2.21	10	10	.0	0	12.1	SSE	36	SE	15	15	8	8	4.4	75
Rapid City	3165	900.1	1011.7	87	58	72.4	1.5	104	22	45	26	15	0	45	43	1.24	-.32	.28	9	13	.0	0	12.1	NNW	42	E	4	18	9	4	3.3	77
Sioux Falls	1420	961.7	1012.5	84	61	72.8	.4	99	2	50	29+	6	0	61	70	5.17	1.89	1.91	12	9	.0	0	10.2	SSE	*29	WNW	25+	11	7	13	5.3	--
TENNESSEE																																
Bristol	1519	965.0	1018.6	86	66	75.8	2.2	91	31+	69	26	6	0	66	80	5.12	1.23	2.14	13	8	.0	0	4.4	SW	*40	N	19	5	14	12	6.4	--
Chattanooga	670	990.3	1017.5	89	69	78.8	1.5	96	1	64	26+	15	0	69	78	2.52	-1.18	.46	13	10	.0	0	5.3	S	33	NW	9	6	13	12	6.1	59
Knoxville	950	983.2	1018.1	88	69	78.2	1.2	95	2+	65	16	13	0	68	77	3.72	.29	.91	12	9	.0	0	6.1	SW	32	SW	7	6	12	13	6.5	50
Memphis (U)	271	------	------	90	73	81.3	1.0	97	5+	65	12	18	0	--	--	6.44	3.91	2.22	10	--	.0	0	----	---	--	---	--	--	--	--	----	--
Memphis	263	1001.7	1016.3	92	72	81.6	1.3	99	5	65	13	20	0	70	74	7.84	4.90	3.19	11	8	.0	0	6.6	S	28	NW	9	6	17	[illegible]	5.6	69
Nashville	577	996.8	1016.6	90	69	79.5	.8	97	2	64	13	18	0	69	75	1.72	-1.59	1.01	9	8	.0	0	5.5	S	38	W	9	[illegible]	14	9	5.5	68
Oak Ridge	905	985.1	------	86	68	77.1	1.8	96	7+	62	26	9	0	--	--	10.46	6.40	7.48	12	12	.0	0	3.5	---	‡30	---	21	7	15	9	5.8	--
TEXAS																																
Abilene	1759	953.3	1013.0	94	72	82.8	.0	100	7	63	13	26	0	65	60	2.68	1.59	1.66	4	3	.0	0	9.4	SSE	35	NE	9	16	6	9	4.6	75
Amarillo	3590	889.6	1011.9	88	64	76.2	-.4	97	7	55	19	16	0	59	59	3.15	.16	1.36	8	9	.0	0	7.9	S	38	SE	26	17	12	2	3.3	90
Austin	615	992.9	1014.3	92	75	83.3	-1.2	97	7+	69	13	25	0	72	75	2.60	.93	.82	9	6	.0	0	8.2	SSE	27	SE	27	1	18	12	6.8	64
Brownsville	16	1011.2	1013.7	92	77	84.4	.3	96	1	72	13+	27	0	75	78	2.83	.38	1.57	7	2	.0	0	10.3	SE	36	SE	31	4	18	9	6.1	77
Corpus Christi	41	1013.2	1014.4	92	76	84.2	.2	96	10	70	12	25	0	76	79	7.06	4.98	2.98	12	7	.0	0	11.9	SE	29	SE	28	3	15	13	6.8	65
Dallas	487	996.3	1014.8	93	75	83.5	-2.3	98	6+	66	12	22	0	70	69	3.31	1.48	1.54	6	4	.0	0	10.5	S	27	S	20	12	12	7	4.9	66
Del Rio (U)	957	------	------	94	75	84.4	-.7	102	1	69	13	27	0	--	--	2.52	1.08	2.04	5	4	.0	0	----	---	--	---	--	--	--	--	----	--
El Paso	3920	885.5	1010.5	95	70	82.5	2.7	103	2	64	13+	30	0	55	42	.77	-.55	.49	4	5	.0	0	10.6	SSE	44	N	29	14	14	3	3.6	79
Fort Worth	544	994.2	1014.6	94	74	84.0	-1.4	101	4	66	12	24	0	70	67	2.76	.88	1.58	5	4	.0	0	11.2	S	*37	WNW	21	11	16	4	4.5	--
Galveston (U)	7	------	------	86	78	82.0	-1.6	90	9	69	13	1	0	--	--	6.97	3.42	1.69	15	--	.0	0	10.3	---	26	S	22	--	--	---	---	52
Galveston	5	1013.5	1015.6	88	78	82.8	-.9	91	6+	70	13	9	0	73	73	6.87	3.25	2.09	14	12	.0	0	8.9	SE	--	---	--	7	10	14	6.5	--
Houston (U)	41	1010.2	------	89	76	82.3	-1.9	95	25+	70	29	15	0	--	--	5.87	2.78	1.84	21	19	.0	0	7.6	Φ S	34	SE	29	2	9	20	7.6	47
Houston	50	1012.9	1015.3	90	75	82.4	-.5	96	5+	70	12	16	0	75	83	7.42	3.30	1.67	19	19	.0	0	6.4	SSE	--	---	--	2	12	17	7.4	--
Laredo	500	997.6	1012.6	98	77	87.1	-.7	103	9+	72	13+	27	0	71	65	3.62	2.32	2.41	10	6	.0	0	13.5	SE	*32	ESE	7	[illegible]	16	7	5.8	--
Lubbock	3243	904.2	1012.8	91	67	78.9	.5	98	24	57	11	20	0	62	59	.05	-1.74	.04	2	0	.0	0	12.2	S	*28	NE	10	18	11	2	3.6	--
Midland	2854	915.0	1011.9	92	69	80.8	-.6	100	25	63	13	24	0	62	57	2.59	.94	1.14	5	6	.0	0	10.6	SE	*25	SSE	20+	12	12	7	4.9	--
Port Arthur	16	1014.2	1015.7	89	74	81.4	-.4	95	5	70	13	16	0	75	84	14.48	9.34	7.08	19	18	.0	0	7.8	E	36	SW	28	2	12	17	7.5	46
San Angelo	1903	946.8	1012.6	97	72	84.8	1.6	103	24+	61	13	27	0	65	59	.51	-1.08	.42	5	3	.0	0	9.8	S	*24	SE	9+	16	[illegible]	17	4.5	--
San Antonio	792	989.5	1014.2	93	75	83.6	-.8	98	1	69	13+	25	0	72	75	5.96	3.98	5.05	8	7	.0	0	9.1	SE	27	NE	19	1	21	9	6.5	61
Victoria	110	1009.5	1014.1	91	75	82.5	-2.8	95	10+	71	29+	22	0	75	80	7.81	5.18	2.80	13	14	.0	0	9.2	SE	‡34	ESE	26	2	16	13	7.2	--
Waco	500	993.9	1014.6	94	74	84.0	-1.5	98	7+	68	12	29	0	72	72	3.00	1.62	1.96	6	4	.0	0	12.4	SSE	*30	WNW	19	5	19	7	5.8	--
Wichita Falls	1020	977.3	1013.0	97	72	84.4	.2	105	4	62	12	28	0	66	59	1.05	-1.02	.32	5	4	.0	0	9.4	S	*27	NNE	26	16	11	4	4.1	--
UTAH																																
Milford	5028	844.6	1011.9	92	53	72.3	.6	101	11	37	17	20	0	--	--	.18	-.63	.18	1	3	.0	0	----	---	--	---	--	24	6	1	2.1	--
Salt Lake City	4220	867.3	1011.4	91	57	74.2	-.2	103	20	44	28+	19	0	40	34	1.33	.36	1.04	3	7	.0	0	10.2	SSE	40	SW	22	20	8	3	2.7	85
Wendover	4237	869.6	1009.8	89	61	75.3	----	101	11+	42	23	19	0	--	--	.13	----	.13	1	6	.0	0	----	---	--	---	--	25	4	2	2.1	--
VERMONT																																
Burlington	331	1002.0	1016.7	79	54	66.0	-2.1	90	29	42	25	1	0	56	74	1.53	-1.48	.49	10	2	.0	0	5.4	SSW	26	SW	7	12	9	10	5.2	67
VIRGINIA																																
Lynchburg	947	984.3	------	86	67	76.6	2.4	95	3	60	26+	13	0	--	--	3.22	-1.13	.84	16	14	.0	0	6.5	---	28	NW	31	7	11	13	6.4	60
Norfolk	26	1016.0	1017.5	88	73	80.0	3.6	96	4+	67	19	15	0	71	77	6.49	1.41	2.40	15	14	.0	0	10.5	SW	30	NE	24	3	14	14	7.1	47
Richmond	162	1011.5	1017.7	87	68	77.5	1.6	95	4+	58	25	15	0	70	83	7.20	2.15	2.85	14	11	.0	0	6.5	SSW	32	W	7	5	10	16	7.1	64
Roanoke	1174	976.3	1017.9	89	67	77.7	3.4	97	3	59	26	17	0	66	73	4.69	.15	1.92	12	9	.0	0	5.7	WSW	--	---	--	5	14	12	6.5	--
WASHINGTON																																
Olympia	190	1009.5	1016.9	74	49	61.4	-1.5	100	9+	38	22	3	0	51	73	1.16	.50	.51	7	1	.0	0	7.4	SW	*23	NW	14	4	10	17	7.3	--
Seattle (U)	14	------	------	71	56	63.4	-1.8	97	9+	48	22	2	0	--	--	1.43	.56	.51	11	--	.0	0	----	---	29	SW	28	--	--	--	----	35
Seattle	14	1015.5	1016.6	--	--	----	----	---	--	--	--	--	--	53	70	----	----	----	--	--	---	--	6.8	S	--	---	--	--	--	--	----	--
Seattle-Tacoma	386	1003.1	1017.3	71	54	62.2	-1.4	99	9	45	22	2	0	52	74	1.92	1.04	.60	13	2	.0	0	9.5	S	*23	SSW	21+	4	7	20	7.4	--
Spokane	2357	945.5	1013.9	77	53	65.1	-2.8	97	11	42	27	6	0	43	50	.56	.07	.26	8	3	.0	0	9.0	SSW	29	SW	29+	10	[illegible]	15	5.7	66
Stampede Pass(R)	3958	880.5	1018.2	58	45	51.5	-5.1	80	9	35	22	0	0	--	--	5.06	2.98	1.36	17	0	.0	0	----	---	--	---	—	8	4	19	6.9	--
Tatoosh Island(R)	101	1013.9	1017.2	60	52	55.9	.2	76	8	48	21+	0	0	53	92	4.24	2.23	1.30	15	0	.0	0	11.1	S	30	S	9	3	7	21	8.0	38
Walla Walla (U)	949	978.0	1013.5	82	59	70.9	-3.3	99	11	49	28	8	0	--	--	.92	.58	.60	6	2	.0	0	5.9	Φ S	19	W	26	17	5	9	4.1	72
Yakima	1061	975.3	1013.8	82	50	66.1	-3.4	99	11+	35	22	[illegible]	0	44	49	.25	.03	.22	5	1	.0	0	7.5	NNW	*30	WNW	2	17	8	6	4.0	--
WEST INDIES																																
San Juan, P.R. (U)	47	------	------	85	76	80.5	.0	90	17	71	14	1	0	--	--	7.65	1.39	3.19	17	5	.0	0	----	---	--	---	--	--	--	--	----	--
San Juan, P.R.	15	1013.3	------	88	74	81.1	.7	90	31+	71	14+	8	0	--	--	8.49	.98	2.35	14	5	.0	0	----	---	26	NE	20	[illegible]	18	11	6.6	45
Swan Island	33	1011.1	------	88	78	83.1	.3	90	21+	72	28	2	0	--	--	2.61	-1.99	.70	13	5	.0	0	----	---	--	---	--	2	15	14	6.9	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

AUGUST 1960

State and station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 90° F or above	Temperature: No. of days: Min 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear	No. of days (sunrise to sunset): Partly cloudy	No. of days (sunrise to sunset): Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F	°F.	°F.	°F		°F				°F	%	In.	In.	In.			In.	In.	M p. h.		M p h			0–3	4–7	8–10	0–10	%
WEST VIRGINIA																																
Charleston	950	982.5	1017.3	85	66	75.9	2.3	90	3+	59	25	2	0	69	82	3.84	-0.71	1.19	13	10	0.0	0	3.8	SW	*32	NNW	10	1	12	18	7.5	--
Huntington (U)	567	------	------	88	68	77.6	2.2	93	17	62	25	13	0	--	--	3.75	.38	1.75	11	--	.0	0	- -	-	--	--	-	-	-	--	--	--
Parkersburg (U)	615	------	------	87	66	76.4	2.4	92	28+	58	25	7	0	--	--	2.36	-1.79	.85	11	10	.0	0	4.7	- -	21	NW	30+	5	6	20	7.2	49
WISCONSIN																																
Green Bay	689	992.9	1015.8	78	58	67.8	.0	90	31	44	15	1	0	61	78	3.52	.49	.89	10	8	.0	0	10.1	SW	36	SW	13	11	14	6	4.9	56
La Crosse	652	990.2	1014.4	82	63	72.3	.9	93	31	49	15	1	0	63	77	4.86	1.57	1.80	14	10	.0	0	8.7	S	*40	NNW	3	8	13	10	5.5	--
Madison	857	980.4	1015.4	80	59	69.3	-1.4	90	31	41	15	1	0	64	83	6.18	3.29	1.95	13	9	.0	0	8.5	S	36	NW	3	9	11	11	5.9	64
Milwaukee	672	991.2	1016.7	77	59	67.8	-2.1	90	31	49	16	1	0	63	85	7.07	4.45	3.59	12	8	.0	0	9.2	SSW	34	W	2	12	10	9	5.0	56
WYOMING																																
Casper	5319	839.1	1010.6	83	51	67.3	-1.6	95	21+	38	28	9	0	34	33	.57	-.29	.57	1	2	.0	0	12.2	WSW	*36	WSW	16	19	8	4	2.9	--
Cheyenne	6131	813.8	1012.1	84	53	68.7	1.9	95	21	42	10	11	0	38	38	.69	-.92	.57	8	8	.0	0	12.9	WNW	40	W	24+	14	10	7	4.3	74
Lander	5563	835.4	1011.4	84	52	68.2	-.2	98	21	40	24	10	0	35	32	T	-.60	T	0	4	.0	0	8.0	ΦSW	37	SW	31	19	10	2	2.9	89
Sheridan	3942	883.8	1012.6	83	53	67.9	-.7	95	1	38	26	11	0	44	46	2.32	1.50	1.27	6	7	.0	0	7.9	WNW	63	NW	15	20	6	5	3.4	75

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

Φ Wind direction to 8 compass points only.

¢ City Office Data.

† Airport Data.

‡ Peak Gust.

HEATING DEGREE DAYS

(Base 65°F.)

AUGUST 1960

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	0	0	0
Huntsville	0	0	
Mobile	0	0	0
Montgomery	0	0	0
ALASKA			
Anchorage	295	522	530
Annette	241	455	479
Barrow	953	1801	1609
Barter Island	861	1715	1550
Bethel	456	722	707
Cold Bay	422	831	865
Cordova	393	769	723
Fairbanks	299	423	445
Juneau	354	675	654
King Salmon	388	668	644
Kotzebue	379	728	827
McGrath	356	560	563
Nome	443	766	970
St. Paul	554	1129	1119
Shemya	443	985	
Yakutat	367	722	759
ARIZONA			
Flagstaff	55	62	127
Phoenix (U)	0	0	0
Phoenix	0	0	0
Prescott	0	0	0
Tucson	0	0	0
Winslow	0	0	0
Yuma	0	0	0
ARKANSAS			
Ft. Smith	0	0	0
Little Rock	0	0	0
Texarkana	0	0	0
CALIFORNIA			
Bakersfield	0	0	0
Bishop	1	1	0
Blue Canyon	48	51	77
Burbank	0	0	0
Eureka (U)	293	618	515
Fresno	0	0	0
Long Beach	0	0	
Los Angeles (U)	0	0	0
Los Angeles	0	4	53
Mt. Shasta (R)	64	67	83
Oakland	64	126	161
Point Arguello (R)	225	430	
Red Bluff	0	0	0
Sacramento (U)	0	0	0
Sacramento	0	0	0
Sandberg (R)	8	8	0
San Diego	0	0	18
San Francisco (U)	219	425	366
San Francisco	89	168	280
San Jose (U)	2	6	18
Santa Maria	133	223	192
COLORADO			
Alamosa	56	97	185
Colorado Springs	23	47	29
Denver	13	20	16
Grand Junction	4	4	0
Pueblo	4	6	0
CONNECTICUT			
Bridgeport	0	0	0
Hartford	13	17	14
Middletown	9	15	17
New Haven	5	5	18
DELAWARE			
Wilmington	0	0	0
DIST. OF COLUMBIA			
Washington (U)	0	0	0
Washington	0	0	0
FLORIDA			
Apalachicola (U)	0	0	0
Daytona Beach	0	0	0
Fort Myers	0	0	0
Jacksonville	0	0	0
Key West	0	0	0
Lakeland (U)	0	0	0
Miami	0	0	0
Miami Beach	0	0	0
Orlando	0	0	0
Pensacola (U)	0	0	0
Tallahassee	0	0	0
Tampa	0	0	0
West Palm Beach	0	0	0
GEORGIA			
Athens	0	0	0
Atlanta	0	0	0
Augusta	0	0	0
Columbus	0	0	0
Macon	0	0	0
Rome	0	0	0
Savannah	0	0	0
Thomasville (U)	0	0	0
IDAHO			
Boise	67	67	0
Idaho Falls 46W (R)	119	124	87
IDAHO (Cont'd.)			
Idaho Falls 42NW (R)	112	112	113
Lewiston	57	57	0
Pocatello	83	83	0
ILLINOIS			
Cairo (U)	0	0	0
Chicago (Midway)	0	0	0
Chicago (O'Hare)	3	5	
Moline	1	3	8
Peoria	0	2	11
Rockford	3	7	
Springfield	0	0	6
INDIANA			
Evansville	0	0	0
Ft. Wayne	0	3	17
Indianapolis	0	0	0
South Bend	0	9	18
IOWA			
Burlington	0	0	0
Des Moines	0	0	17
Dubuque	8	17	36
Sioux City	0	0	25
Waterloo	3	8	21
KANSAS			
Concordia (U)	0	0	0
Dodge City	0	0	0
Goodland	5	7	0
Topeka	0	0	8
Wichita	0	0	0
KENTUCKY			
Lexington	0	0	0
Louisville	0	0	0
LOUISIANA			
Alexandria	0	0	
Baton Rouge	0	0	0
Lake Charles	0	0	0
New Orleans (U)	0	0	0
New Orleans	0	0	0
Shreveport	0	0	0
MAINE			
Caribou	91	167	218
Greenville (U)	78	144	
Portland	39	55	71
MARYLAND			
Baltimore (U)	0	0	0
Baltimore	0	0	0
Frederick	0	0	0
MASSACHUSETTS			
Blue Hill Obs. (R)	22	28	
Boston	5	5	7
Nantucket	21	28	56
Pittsfield	58	109	88
Worcester	31	50	33
MICHIGAN			
Alpena	116	208	135
Detroit (City AP)	0	4	8
Detroit (M. Wayne Co.)	0	8	
Detroit (Willow Run)	0	3	10
Escanaba (U)	36	108	157
Flint	17	51	42
Grand Rapids	3	20	43
Lansing	10	39	46
Marquette (U)	61	153	156
Muskegon	4	30	74
S. Ste. Marie	61	185	235
MINNESOTA			
Duluth	62	127	147
Internat. Falls	59	132	188
Minneapolis	11	19	25
Rochester	14	41	62
St. Cloud	14	29	85
MISSISSIPPI			
Jackson	0	0	0
Meridian	0	0	0
Vicksburg (U)	0	0	0
MISSOURI			
Columbia	0	0	6
Kansas City	0	0	0
St. Joseph	0	0	5
St. Louis (RFC)	0	0	0
St. Louis	0	0	0
Springfield	0	0	8
MONTANA			
Billings	37	38	28
Butte	239	293	289
Glasgow	35	46	44
Great Falls	78	89	74
Havre (U)	47	52	58
Helena	114	121	102
Kalispell	149	164	130
Miles City	24	24	17
Missoula	136	144	79
NEBRASKA			
Grand Island	0	0	6
Lincoln (U)	0	0	7
Norfolk	0	0	17
North Platte	4	4	18
Omaha	0	0	5
Omaha N. Omaha AP	0	0	14
Scottsbluff	17	21	0
Valentine	9	9	21
NEVADA			
Elko	102	102	34
Ely	75	85	66
Las Vegas	0	0	0
Reno	78	83	88
Tonopah	10	10	5
Winnemucca	81	81	17
NEW HAMPSHIRE			
Concord	22	30	68
Mt. Washington Obs. (R)	502	1080	
NEW JERSEY			
Atlantic City	0	0	0
Atlantic City (U)	0	0	0
Newark	0	0	0
Trenton (U)	0	0	0
NEW MEXICO			
Albuquerque	0	0	0
Clayton	0	0	0
Raton	7	27	53
Roswell	0	0	0
Silver City	0	0	
NEW YORK			
Albany	11	23	24
Binghamton	12	48	79
Buffalo	10	26	46
New York (U)	0	0	0
New York	0	0	0
Rochester	24	46	43
Schenectady	6	13	19
Syracuse	12	23	29
NORTH CAROLINA			
Asheville (U)	0	0	0
Cape Hatteras (R)	0	0	0
Charlotte	0	0	0
Greensboro	0	0	0
Raleigh	0	0	0
Wilmington	0	0	0
Winston-Salem	0	0	0
NORTH DAKOTA			
Bismarck	13	20	66
Devils Lake (U)	31	59	108
Fargo	9	32	66
Grand Forks CAA	20	59	
Pembina	18	56	
Williston (U)	26	36	71
OHIO			
Akron	0	15	17
Cincinnati (U)	0	0	0
Cincinnati	0	0	0
Cincinnati Obs.	0	0	0
Cleveland	7	45	10
Columbus	0	1	8
Columbus (U)	0	0	0
Dayton	0	1	5
Mansfield	0	15	
Sandusky (U)	0	1	0
Toledo	0	7	12
Youngstown	2	26	19
OKLAHOMA			
Oklahoma City	0	0	0
Tulsa	0	0	0
OREGON			
Astoria	155	333	249
Burns (U)	138	145	47
Eugene	84	105	67
Meacham	239	263	190
Medford	35	35	0
Pendleton	43	43	0
Portland (U)	44	57	27
Portland	52	70	47
Roseburg	48	51	53
Salem	59	91	44
Sexton Summit (R)	194	244	157
PENNSYLVANIA			
Allentown	0	0	0
Erie	6	31	40
Harrisburg	0	0	0
Philadelphia (U)	0	0	0
Philadelphia	0	0	0
Pittsburgh (U)	0	0	0
Pittsburgh	0	15	20
Reading (U)	0	0	5
Scranton	4	12	18
Williamsport	2	6	16
RHODE ISLAND			
Block Island	5	7	27
Providence	8	8	26
SOUTH CAROLINA			
Charleston (U)	0	0	0
Charleston	0	0	0
Columbia	0	0	0
Florence	0	0	0
Greenville	0	0	0
Spartanburg	0	0	0
SOUTH DAKOTA			
Huron	1	5	26
Pierre	1	2	
Rapid City	12	13	56
Sioux Falls	2	5	37
TENNESSEE			
Bristol	0	0	0
Chattanooga	0	0	0
Knoxville	0	0	0
Memphis (U)	0	0	0
Memphis	0	0	0
Nashville	0	0	0
Oak Ridge (U)	0	0	0
TEXAS			
Abilene	0	0	0
Amarillo	0	3	0
Austin	0	0	0
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	0	0	0
Del Rio (U)	0	0	
El Paso	0	0	0
Ft. Worth	0	0	0
Galveston (U)	0	0	0
Galveston	0	0	0
Houston (U)	0	0	0
Houston	0	0	0
Laredo	0	0	0
Lubbock	0	0	0
Midland	0	0	0
Port Arthur	0	0	0
San Angelo	0	0	0
San Antonio	0	0	0
Victoria	0	0	0
Waco	0	0	0
Wichita Falls	0	0	0
UTAH			
Milford	14	14	0
Salt Lake City	19	19	0
Wendover	18	18	
VERMONT			
Burlington	55	83	66
VIRGINIA			
Lynchburg	0	0	0
Norfolk	0	0	0
Richmond	0	0	0
Roanoke	0	0	0
WASHINGTON			
Olympia	140	199	174
Seattle (U)	97	125	94
Seattle	74	93	103
Seattle-Tacoma	126	167	145
Spokane	97	100	45
Stampede Pass (R)	424	610	511
Tatoosh Island (R)	273	583	583
Walla Walla	36	36	
Walla Walla (U)	26	26	0
Yakima	91	91	7
WEST VIRGINIA			
Charleston	0	0	0
Huntington (U)	0	0	0
Parkersburg (U)	0	0	0
WISCONSIN			
Green Bay	31	71	90
La Crosse	6	14	31
Madison	23	46	44
Milwaukee	20	60	52
WYOMING			
Casper	61	72	37
Cheyenne	45	62	72
Lander	49	62	30
Sheridan	50	56	68

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

AUGUST 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS
Alabama										0	0	3	0	0	0	5	0												
Alaska *																													
Arizona												5			1													3	
Arkansas	1	1										5	5	1	1														
California										0	0	4	4																
Colorado						0	0	0	4	0	S	3	3	1	2	5	0									0	0	3	3
Connecticut								3	3							4												5	4
Delaware										0	0	4	C																
Florida										0	0	3	0	0	4	0	0												
Georgia	1	1	0	0	4	0	0	3	4	0	0	4	4	0	0	3	0									0	0	0	4
Hawaii *																													
Idaho												5			4	°4	C												
Illinois	1	1	0	0	4	0	0	3	5	6	0	5	5	0	5	5	0									1/2	2/1	4	0
Indiana										0	4	4	0	0	3	4	0									0	0	3	3
Iowa	7	4	0	0	4	0	0	5	6	0	0	5	6	0	1	D	D									2	0	4	D
Kansas	2	2	0	0	0	0	0	5	0	0	16	5	0	2	5	4	0									1	0	0	0
Kentucky							1	3	5	1	1	4	4			4												4	
Louisiana										0	0	4	0																
Maine	1	1	0	0	4					0	0	4	0	0	0	4	0												
Maryland										2	0	°4	C	0	0	4	0									0	0	°5	C
Massachusetts										0	0	2	0	0	3	4	0									0	0	4	0
Michigan	1	1	0	0	4				5	1	2	6		2		5													
Minnesota	2	1	0	0	4	0	0	3	4	2	1	5	4	1	3	0	0									1	0	5	4
Mississippi	1	1	0	0	4																					0	0	4	0
Missouri																												5	
Montana						0	0	5	6	0	0	4	0	0	0	2	0												
Nebraska	7	5	1	0	5	0	0	5	6	0	0	5	5	1	0	4	5												
Nevada														1														4	
New Hampshire						0	0	0	3					0	0	4	0												
New Jersey										0	2	3	0	2	2	5	0									1	3	3	0
New Mexico						0	0	2	4	0	0	4	0	1	0	0	0												
New York												3				5										2		6	5
North Carolina						0	0	3	5	0	1	5	4	2	3	5	2									0	0	4	5
North Dakota	5	3	0	1	5			4	6			5																	
Ohio	1	1	0	0	4									0	2											0	0	5	
Oklahoma	2	2	0	0	4	0	0	4	0	0	0	5	0	0	0	5	0									0	0	4	0
Oregon						0	0	2	3	2	0	4	4	0	0	5	4									0	0	4	4
Pennsylvania															1	5													
Puerto Rico														1	0	0	0												
Rhode Island												3				4													
South Carolina						0	0	2	3	0	0	4	0	0	0	3	0												
South Dakota	1	1		1	4		1	5	6			5	3		5	4												4	3
Tennessee	1	1	0	0	4	0	0	0	5					2	3	6	0									0	0	U	0
Texas	4	4	0	2	4	0	0	2	5	2	0	5	0	0	0	1	0												
Utah														1														4	
U. S. Virgin Is.*																													
Vermont														0	0	3	0									0	0	4	0
Virginia	1	1	0	0	U	0	0	U	U	0	0	U	U	0	0	U	U									0	0	U	U
Washington															1	4	3												
West Virginia																										1	0	4	4
Wisconsin	4	4	0	0	4					0	0	5	5																
Wyoming	1	1	0	0	2	0	0	4	4	0	1	4	0	0	1	0	0												

* No occurrence of storms or unusual weather phenomena.
° Includes crop damage.
C Crop damage.
D Occurred; estimates not available.
S Several.
U Unknown.
1/ Heavy rain caused flashflood which drowned youth.
2/ Seiche (caused by wind & pressure) drowned 1 man, injured another.
‡ Includes heavy sleet storm.
# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

AUGUST 1960

The most important flooding during the month, in continental United States, occurred in connection with tropical storm "Brenda" in the central and west coast portions of Florida during the period from July 28 to August 2. This was the worst storm to hit the west-central Florida coast since the hurricane in September 1950. Damage from the widespread flooding resulting from the record-breaking rains was estimated at several million dollars.

Flash floods were reported in New Jersey, Virginia, West Virginia, Ohio, and Texas. Flooding reported elsewhere was mostly minor.

ATLANTIC SLOPE DRAINAGE

Heavy showers in the Mahwah-Pompton Lakes, New Jersey, area caused sharp rises on the Ramapo River on the 20th and 21st. Near flood stage occurred at Mahwah on the 20th and slightly above flood stage at Pompton Lakes, N. Y., on the 20th and 21st.

Heavy showers at Boonton, N. J., on the 31st caused some flash flooding of nearby small streams.

A serious flash flood occurred in the west portion of Richmond, Va., metropolitan area on the 6th. Torrential rains from afternoon thunderstorms flooded a wide area of Lakeside westward to Tuckahoe District. Three substations on the edge of the district reported 3.68 inches of rainfall within an hour. Water rose above flood level in many homes. Countless other basements were flooded. This flood affected substantially the same area as a similar flood in early August of 1959 when over 8 inches of rain was reported. This storm was one of the worst natural disasters occurring in Richmond. Damages of this year's flood was comparable to the one of 1959.

The flooding on the Tar and Neuse Rivers in eastern North Carolina beginning on July 30 and continuing through August 4 on the Tar and August 8 on the Neuse was due to heavy rains accompanying the passage of tropical storm "Brenda" across eastern North Carolina. Small streams in the eastern part of the State overflowed their banks generally. Flooding on the main streams was minor, except on the Neuse from the Goldsboro area below Kinston where there was considerable inconvenience to farming interests in low areas. Heavy rains (6 inches) on the 22d and 24th in Randolph County caused flash floods along small streams with heavy damage to crops and property. No flood stages occurred along the main streams.

Some shallow flooding occurred on the Waccamaw River at Conway, S. C., beginning on July 30 and continued to August 2. Minor flooding occurred on this stream again beginning on the 7th and continued through the 15th. The North Fork of the Edisto River, subsiding from a shallow flood in July, returned within its banks on August 1 at Orangeburg, S. C.

The severe flooding that occurred in the central and west coast portions of Florida during the latter part of July and the first part of August from the excessive rainfall accompanying tropical storm "Brenda" was discussed in the July issue of this publication.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--Heavy rainfall (4 to 8.5 inches) over the southern half of Minnesota and northern half of Wisconsin from the 26th to the 29th, caused light flooding on the Root River at Hokah, Minn., on the 29th and 30th. The Chippewa River from its headwaters to its mouth rose rapidly on the 28th and 29th to within 0.4 foot of flood stage. The upper Wisconsin River reached two-thirds bankfull at Merrill, Wis. There was no damage along the Root River as the rise of July 2 to 3 destroyed most crops left after the May and June rises.

Missouri Basin.--The light flooding on the Floyd River at James, Iowa, on the 28th was due to heavy thundershowers on the 27th and 28th. The rainfall was the heaviest in the triangular area from Yankton, S. Dak., to Alton to Sioux City, Iowa. The rainfall ranged from 2.5 to 4 inches with scattered reports of about 5 inches. No damage was reported.

Slight flooding occurred at a few places on the Wahoo Creek, south of Wahoo, Nebr., and on the Little Papillion Creek near Fort Crook, Nebr., on the 24th due to heavy thundershowers during the night of the 23d and 24th.

Light to moderate flooding occurred on the North Branch of the Elkhorn in the vicinity of Pierce, Nebr., on the 30th and 31st due to heavy rains (near 4 inches) on the night of the 27th and 28th. Damages were light and confined to crops and pastures between Plainview and Osmond to about 5 miles southeast of Pierce, Nebr.

Light flooding occurred on the Smoky Hill River at Ellsworth, Kans., on the 29th, as a result of heavy thundershowers immediately upstream. Substantial within bank rises developed from locally heavy rains of 4 to 5 inches at midmonth on the Delaware River and Stranger and Soldier Creeks. Downpours, ranging up to 6.98 inches at Reading, Kans., on the 25th, caused tributaries on the upper Marais des Cygnes to overflow in local areas; however, the main channel remained within banks. Damages were negligible on the Smoky Hill River. Losses on the upper Marais des Cygnes tributaries were light.

Minor flooding occurred on the Grand River at Sumner, Mo., on the 30th. Damages were negligible.

Near bankfull rises occurred on the main stem of the Missouri at St. Joseph, Mo., on the One Hundred Two River at Maryville, Mo., and on the Platte River at Agency, Mo., towards the end of the month.

Ohio Basin.--Locally heavy showers in the Beaver Falls, Pa., and East Liverpool, Ohio, areas on the 31st resulted in flash flooding due to the inability of sewers to carry the runoff. Streets were blocked and cellars of homes and business establishments were flooded. Newspaper accounts estimated $50,000 damage in Beaver Falls, Pa.

Flash flooding occurred during the early morning hours of the 4th in the Middle Island Creek basin in West Virginia and just below Lock 16 on the Ohio River. There was some flash flooding on the Ohio side of the Ohio River above the confluence of Middle Island Creek. The principal damage in West Virginia occurred in the Smithburg-West Union-Pennsboro area. The heaviest 24-hour rainfall reported in the flash-flood areas was 4.09 inches at Smithburg on the 4th.

Arkansas Basin.--The flooding on the Little Arkansas at Sedgwick, Kans., from the 26th to the 28th was due to heavy rains on the 24th and 25th. Unofficial rainfall amounts of up to 9-1/2 inches was reported in the north portion of Wichita. Local runoff caused many streets and basements to be flooded, particularly in the northeast portions of Wichita. Rains over 5 inches on top of already saturated conditions in Harvey County (Little Arkansas

Basin) on the 25th caused local flooding in Newton, and resulted in a crest of 5.7 feet over flood stage on the Little Arkansas River at Sedgwick, Kans. Below Wichita, Kans., the Arkansas River was nearly bankfull at Oxford, and 1.25 feet over bankfull at Arkansas City, Kans. No damage resulted from this minor overflow as Arkansas City is protected by levees.

Flood stage was just reached on the Canadian River at Canadian, Tex., on the 11th and 12th. No damage resulted.

Lower Mississippi Basin.--Heavy rainfall early on the morning of the 22d caused a rapid rise in the lower Big Black River to a stage of 30.6 feet at Bovina, Miss., 2.6 feet above flood stage. The flooding was confined to the reach below and to about 30 to 40 miles above Bovina. Only minor agricultural flooding occurred, and damages are believed light. Some flooding occurred in the City of Vicksburg along Glass Bayou and Stouts Bayou. Several homes reported water from 1 to 3 feet deep and two churches were flooded.

WEST GULF OF MEXICO DRAINAGE

The flooding on the Navidad River at Ganada, Tex., from the 15th to the 17th was due to heavy showers during the period from the 13th to the 15th. Damage from this rise was comparatively minor. There was some flash flooding in the small tributaries around San Antonio on the 15th. Many low water crossings were closed, but there was no damage outside of this inconvenience.

Heavy rainfall of up to 8 to 10 inches on the 11th and 12th caused flash flooding on the upper Nueces, the West Nueces, and upper Frio basins in Texas. The area of heavy rainfall was limited in extent so only minor damage was reported. Another area of heavy rainfall with minor flooding occurred on the lower Frio from Calliham to Three Rivers and also on the lower Atascosa below Whitsett. The heaviest rainfall in this area was 8 inches northeast of Tilden, Tex. Flash flooding occurred again on the 15th on the upper Frio, the upper Nueces, and Hondo Creek basins. The largest rainfall amount reported for the entire period was 16 inches from the 11th to the 15th at Speirs Ranch 8 miles east of Camp Wood, Tex. Heavy local showers on the 28th resulted in minor flooding on the lower Nueces, the lower Frio, and the lower Atascosa watersheds. The largest rainfall amount reported on the 28th was 10 inches, 4 miles south of Tilden, Tex.

PACIFIC SLOPE DRAINAGE

Columbia Basin.--This was a cool August over the Pacific Northwest. Temperatures were about 2° below average west of the Cascades, and from 2° to 5° below average elsewhere in the Columbia Basin.

Precipitation was below average in central Oregon, eastern Washington, and the Okanogan and Arrow Lakes section of British Columbia. Elsewhere, precipitation was from 150 to 250 percent of the August average, with the greatest excess along the crest of the Washington Cascades and in northeastern Oregon. Snow occurred at the higher elevations in the Cascades during the storm period from the 20th to the 25th of the month.

The upper Columbia River fell steadily during the entire month. An unseasonable rise occurred in the lower Snake River basin on the 2d, on the Clearwater River at Kamiah and Spalding, Idaho, and on the lower Snake River at Clarkston, Idaho, due to locally heavy rains.

FLOOD STAGE DATA

(All dates in August unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	Ft.			Ft.	
Ramapo: Pompton Lakes, N. J.	2	20	21	2.1	20
Tar: Rocky Mount, N. C.	9	July 30	July 30	9.1	July 30
Tarboro, N. C.	19	1	2	19.7	2
Greenville, N. C.	13	2	4	14.3	2
Neuse: Goldsboro, N. C.	14	July 30	5	20.5	3
Kinston, N. C.	14	1	8	17.15	5
Waccamaw: Conway, S. C.	7	July 30	2	7.5	July 31
		7	15	7.7	10-11
North Fork Edisto: Orangeburg, S.C.	8	July 30	1	8.3	July 31
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Root: Hokah, Minn.	47	29	30	48.5	29
Missouri Basin					
Floyd: James, Iowa	16	28	28	16.2	28
North Branch Elkhorn: Pierce, Nebr.	12	30	31	12.3	30
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Missouri Basin (Cont'd.)					
Smoky Hill: Ellsworth, Kans.	20	29	29	21.3	29
Grand: Sumner, Mo.	26	30	30	26.5	30
Arkansas Basin					
Little Arkansas: Sedgwick, Kans.	18	26	28	23.7	26
Arkansas: Arkansas City, Kans.	16	25	26	17.25	25
Canadian: Canadian, Tex.	8	11	12	8.0	11-12
Lower Mississippi Basin					
Big Black: Bovina, Miss.	28	22	22	30.6	22
WEST GULF OF MEXICO DRAINAGE					
Navidad: Ganado, Tex.	21	15	17	25.4	16
Frio: Calliham, Tex.	12	12	12	18.5	12
Nueces: Calallen, Tex.	7	31	Sept. 3	7.3	Sept. 2

* Tentative

RAWINSONDE DATA

Average monthly values

AUGUST 1960

ALBANY, N. Y. (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	16.6	92	214	1.2
1,000	31	146	16.3	88	259	.6
950	31	584	17.3	75	291	2.9
900	31	1,047	15.3	72	297	7.2
850	31	1,530	12.9	67	293	8.7
800	31	2,038	10.5	59	287	11.1
750	31	2,572	8.6	51	281	14.6
700	31	3,143	6.0	47	273	15.2
650	31	3,744	2.9	39	273	16.5
600	31	4,391	- .4	38	272	18.7
550	31	5,075	- 4.4		272	21.2
500	31	5,827	- 9.1		270	23.3
450	31	6,632	-14.6		272	25.8
400	31	7,518	-21.0		270	30.1
350	31	8,490	-27.8		266	33.4
300	31	9,582	-35.6		265	38.3
250	31	10,827	-44.6		261	48.0
200	31	12,291	-53.6		264	47.2
175	31	13,143	-56.8		268	46.8
150	31	14,114	-59.3		269	40.0
125	31	15,251	-61.2		269	37.1
100	31	16,636	-61.2		273	28.6
80	31	18,033	-58.2		274	11.7
60	31	19,860	-54.7		257	1.0
50	31	21,033	-52.7		100	1.9
40	30	22,482	-50.5		98	9.1
30	30	24,370	-48.1		87	13.0
25	27	25,572	-46.4		90	11.1
20	20	27,059	-43.8		99	13.6
15	16	29,007	-40.8		90	16.1
10	5	31,745	-38.2			

ALBUQUERQUE, N. MEX. (840 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,619	19.2	57	101	2.3
1,000	31	89				
950	31	531				
900	31	1,012				
850	31	1,517				
800	31	2,041	18.7	52	197	3.5
750	31	2,585	15.8	50	223	5.2
700	31	3,176	12.1	50	258	6.0
650	31	3,785	7.4	53	273	7.2
600	31	4,446	2.4	58	272	5.1
550	31	5,153	- 2.7	56	291	5.8
500	31	5,894	- 7.4	48	294	5.6
450	31	6,702	-12.6	44	294	4.7
400	31	7,599	-18.2		284	8.5
350	31	8,585	-25.2		271	11.1
300	31	9,685	-33.3		281	14.6
250	31	10,941	-42.9		275	21.0
200	31	12,411	-54.1		272	27.8
175	31	13,256	-60.0		272	28.0
150	31	14,206	-65.8		272	24.3
125	31	15,300	-70.0		281	15.3
100	31	16,625	-69.3		271	7.0
80	31	17,969	-65.1		84	4.7
60	31	19,752	-58.4		93	12.8
50	30	20,906	-55.8		90	16.3
40	29	22,333	-53.8		91	19.2
30	28	24,192	-51.0		87	22.9
25	26	25,381	-48.9		86	26.4
20	24	26,856	-46.7		90	25.3
15	18	28,765	-44.1		85	28.8
10	5	31,507	-40.7			

AMARILLO, TEX. (893 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,095	19.0	79	198	4.3
1,000	31	104				
950	31	548				
900	31	1,021				
850	31	1,520	20.9	61	222	19.6
800	31	2,044	18.4	56	223	14.8
750	31	2,589	14.9	55	235	8.7
700	31	3,176	10.7	56	236	3.3
650	31	3,782	6.5	50	175	1.4
600	30	4,442	2.0	50	220	.8
550	30	5,131	- 2.0	37	269	1.2
500	30	5,891	- 6.7		294	2.1
450	30	6,696	-12.0		262	4.1
400	30	7,601	-17.7		289	6.0
350	30	8,586	-24.8		295	8.2
300	30	9,689	-33.0		281	11.9
250	30	10,946	-42.5		283	14.0
200	29	12,417	-53.2		289	15.7
175	29	13,266	-59.0		288	16.3
150	29	14,220	-64.2		295	15.0
125	29	15,322	-68.5		291	11.9
100	29	16,654	-69.2		299	3.5
80	29	18,003	-64.2		106	3.9
60	27	19,792	-58.3		94	12.0
50	27	20,947	-55.4		92	14.4
40	27	22,377	-53.0		91	16.7
30	23	24,237	-50.4		89	18.8
25	23	25,430	-48.9		90	22.0
20	21	26,899	-46.5		88	24.5
15	10	28,815	-44.0			
10						

ANCHORAGE, ALASKA (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	30	10.8	85	196	2.1
1,000	31	91			184	2.1
950	31	516	9.4	76	187	3.7
900	31	966	6.9	76	[illegible]	[illegible]
850	31	1,434	3.9	79	147	5.2
800	31	1,925	1.1	79	151	5.4
750	31	2,438	- 1.7	77	155	5.8
700	31	2,989	- 4.7	76	171	6.0
650	31	[illegible]	- 7.6	[illegible]	187	5.8
600	31	4,189	-11.1	61	194	4.9
550	31	4,845	-14.9	58	200	6.4
500	31	5,569	-19.1	52	210	7.2
450	31	6,335	-24.4	48	214	7.4
400	31	7,194	-30.4	42	206	10.5
350	31	8,130	-37.3		199	9.7
300	31	9,178	-44.9		222	[illegible]
250	31	10,380	-50.0		242	15.7
200	31	11,845	-47.8		260	13.8
175	31	12,728	-47.4		259	11.5
150	31	13,745	-48.2		267	11.5
125	31	14,945	-48.8		263	11.3
100	31	16,413	-48.7		262	9.9
80	31	17,878	-48.8		275	5.6
60	30	19,765	-48.8		285	2.5
50	29	20,963	-49.1		350	1.4
40	29	22,427	-48.8		64	1.9
30	28	24,325	-47.7		85	4.5
25	26	25,522	-46.2		96	5.2
20	22	27,000	-44.3		114	4.9
15	14	28,944	-40.8			
10						

ANNETTE, ALASKA (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	12.0	88	149	1.4
1,000	31	127	11.8	87	162	1.2
950	31	556	10.3	82	216	2.1
900	31	1,005	8.1	79	231	3.7
850	31	1,476	5.6	76	228	4.7
800	31	1,969	2.7	77	239	5.4
750	31	2,488	- .3	70	260	6.4
700	31	3,040	- 3.0	66	258	7.4
650	31	3,620	- 6.4	59	257	9.1
600	31	4,247	-10.0	55	252	10.5
550	31	4,908	-14.0	54	252	12.0
500	31	5,632	-18.5	49	257	13.2
450	31	6,405	-23.6	43	267	15.5
400	31	7,264	-29.8	43	266	17.1
350	31	8,203	-36.5		261	21.2
300	31	9,256	-43.5		272	20.8
250	30	10,461	-48.5		276	21.0
200	30	11,924	-49.9		287	20.8
175	30	12,797	-50.6		287	18.3
150	30	13,800	-51.1		281	15.2
125	30	14,984	-51.7		281	13.4
100	29	16,425	-52.3		282	10.1
80	29	17,871	-52.0		278	6.4
60	28	19,734	-51.2		280	2.3
50	27	20,926	-50.8		32	2.3
40	26	22,386	-49.9		89	2.5
30	24	24,270	-48.6		78	3.3
25	23	25,471	-47.4		79	5.8
20	22	26,952	-45.9		98	5.8
15	16	28,854	-43.6		57	5.2
10						

ATHENS, GA. (991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	246	21.1	95		0.0
1,000	30	165				
950	30	608	21.8	80	283	2.9
900	30	1,081	19.4	78	267	4.7
850	30	1,572	16.5	76	249	5.6
800	30	2,087	13.5	74	250	6.4
750	30	2,624	10.3	71	242	4.9
700	30	3,200	6.9	69	234	5.1
650	30	3,802	3.3	67	250	6.2
600	30	4,451	.1	55	253	7.6
550	30	5,136	- 3.6	46	239	6.2
500	30	5,891	- 8.0	42	243	6.4
450	30	6,694	-13.2	37	241	6.6
400	30	7,589	-19.0	31	242	7.4
350	30	8,570	-25.8	33	268	8.2
300	30	9,670	-33.8		270	9.7
250	30	10,923	-43.1		286	11.1
200	30	12,391	-53.8		305	9.7
175	30	13,238	-59.0		318	6.4
150	30	14,194	-63.6		326	4.5
125	29	15,301	-66.7		340	3.3
100	29	16,650	-66.2		43	2.7
80	29	18,012	-63.3		61	6.4
60	29	19,802	-58.3		81	13.6
50	29	20,957	-55.5		87	18.1
40	27	22,391	-52.6		90	22.3
30	27	24,264	-49.5		92	23.9
25	23	25,459	-47.6		88	25.3
20	20	26,937	-46.2		83	28.8
15	10	28,869	-42.6			
10						
7						

BARROW, ALASKA (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	0.7	94	82	7.8
1,000	31	109	.6	87	89	8.0
950	31	526	2.0	79	101	8.5
900	31	960	2.2	73	105	6.0
850	31	1,422	1.0	69	104	5.1
800	31	1,908	- 1.2	64	137	2.9
750	31	2,415	- 3.7	62	142	2.3
700	31	2,964	- 6.6	61	180	2.1
650	31	3,535	- 9.4	55	226	1.9
600	31	4,155	-12.9	50	255	3.1
550	31	4,811	-16.7	47	265	5.2
500	31	5,525	-21.1	47	272	6.4
450	31	6,285	-26.4	46	273	8.2
400	31	7,136	-32.5	45	267	9.9
350	31	8,064	-39.3		260	11.3
300	31	9,104	-46.4		256	12.4
250	31	10,298	-51.2		263	12.4
200	31	11,761	-47.3		267	12.2
175	31	12,645	-47.0		271	9.9
150	31	13,668	-46.5		270	8.0
125	31	14,878	-46.5		270	7.4
100	31	16,362	-46.2		264	4.7
80	30	17,844	-46.1		256	3.3
60	29	19,751	-46.3		236	1.7
50	28	20,965	-46.3		131	.6
40	28	22,447	-46.1		95	2.7
30	26	24,350	-46.1		81	3.5
25	25	25,563	-45.2		68	3.9
20	21	27,069	-43.3		70	5.2
15	14	28,982	-41.2			
10						
7						

BARTER IS., ALASKA (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	1.8	98	70	4.5
1,000	31	107	1.9	95	43	3.1
950	31	521	2.7	91	75	5.1
900	31	960	2.6	84	314	1.2
850	31	1,421	1.2	76	304	3.5
800	31	1,908	- .9	71	330	3.1
750	31	2,415	- 3.3	68	320	4.9
700	31	2,964	- 6.1	64	326	4.9
650	31	3,531	- 9.4	60	324	7.4
600	31	4,155	-12.9	58	316	8.7
550	31	4,808	-16.8	53	288	8.9
500	31	5,522	-21.5	54	303	14.4
450	31	6,285	-26.5	50	306	15.0
400	31	7,131	-32.5	47	303	17.5
350	31	8,059	-39.1		302	19.0
300	31	9,098	-46.5		310	23.1
250	31	10,294	-51.1		298	20.8
200	30	11,762	-46.5		289	17.5
175	29	12,644	-45.9		281	14.2
150	28	13,661	-45.8		281	9.5
125	27	14,871	-46.1		282	8.5
100	27	16,354	-45.9		264	6.0
80	26	17,836	-46.1		281	4.3
60	25	19,749	-46.3		307	1.4
50	24	20,960	-46.5		304	1.4
40	24	22,440	-46.5		74	4.5
30	23	24,350	-46.1		79	5.8
25	23	25,563	-45.3		89	7.2
20	23	27,058	-43.6		84	7.8
15	23	29,006	-40.2		90	6.0
10	20	31,806	-34.4		70	4.5
7	10	34,345	-30.9			

BETHEL, ALASKA (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	8.2	92	235	2.9
1,000	31	77			300	2.1
950	31	504	8.3	80	188	5.4
900	31	948	5.8	74	190	6.8
850	31	1,415	3.7	70	199	7.0
800	31	1,906	1.4	66	204	7.0
750	31	2,423	- 1.4	63	198	6.0
700	31	2,972	- 3.8	52	186	4.5
650	31	3,549	- 7.1	49	180	3.9
600	31	4,175	-10.8	44	193	4.1
550	31	4,836	-14.7	41	207	4.7
500	31	5,557	-19.4	36	219	4.9
450	31	6,328	-24.5	36	226	5.8
400	31	7,182	-30.5	39	220	4.5
350	31	8,119	-37.1		226	6.2
300	31	9,170	-43.9		206	9.1
250	31	10,380	-48.7		232	10.3
200	31	11,851	-47.4		263	14.2
175	31	12,735	-47.0		256	11.7
150	31	13,756	-47.4		248	11.1
125	31	14,960	-48.1		248	10.1
100	31	16,430	-48.6		244	8.7
80	30	17,899	-48.5		237	4.7
60	30	19,792	-48.8		219	1.7
50	29	20,994	-48.9		220	1.2
40	26	22,456	-48.7		91	1.7
30	21	24,369	-48.1		94	3.3
25	21	25,574	-47.4		96	5.8
20	13	27,082	-45.4			
15						
10						
7						

BISMARCK, N. DAK. (953 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	505	15.1	70	140	0.8
1,000	30	93				
950	30	533			270	.8
900	30	994	18.6	52	216	5.6
850	30	1,484	16.5	51	232	6.4
800	30	1,998	13.7	48	255	8.7
750	30	2,537	10.2	46	262	10.3
700	30	3,110	6.3	45	268	11.9
650	30	3,709	2.5	44	272	15.9
600	30	4,356	- 1.8	41	270	19.2
550	30	5,035	- 6.4	41	270	22.7
500	30	5,783	-11.2	41	266	25.5
450	30	6,579	-16.7	38	266	28.2
400	30	7,462	-22.5		266	30.3
350	30	8,429	-29.8		263	35.2
300	30	9,509	-38.4		259	36.7
250	30	10,738	-47.8		255	41.4
200	30	12,186	-54.6		256	41.8
175	30	13,039	-55.7		262	44.5
150	30	14,020	-56.4		267	38.3
125	30	15,172	-58.4		270	29.5
100	30	16,576	-58.2		272	17.3
80	30	17,986	-56.2		266	5.8
60	30	19,825	-53.7		38	1.6
50	30	21,002	-52.1		54	3.3
40	29	22,454	-50.6		78	6.4
30	28	24,339	-48.4		76	7.6
25	28	25,544	-46.7		75	9.7
20	28	27,031	-44.2		79	10.5
15	22	28,963	-41.4		86	12.8
10	11	31,719	-37.2			
7						

BOISE, IDAHO (915 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	14.5	56	159	3.9
1,000	31	106				
950	31	549				
900	31	1,009	17.3	45	172	1.7
850	31	1,499	17.4	35	281	2.7
800	31	2,013	14.0	37	283	4.9
750	31	2,552	10.1	40	271	8.2
700	31	3,124	6.0	41	264	12.8
650	31	3,722	1.7	42	260	18.1
600	31	4,368	- 2.1	34	255	23.9
550	31	5,045	- 6.6	34	253	26.4
500	31	5,794	-11.8		252	29.0
450	31	6,587	-17.5		254	29.1
400	31	7,467	-23.6		258	34.2
350	31	8,430	-30.6		260	34.8
300	31	9,506	-39.1		260	37.7
250	31	10,735	-47.5		257	42.2
200	31	12,187	-53.6		258	48.2
175	31	13,043	-55.1		260	48.0
150	31	14,025	-56.6		258	42.9
125	30	15,177	-59.1		264	31.9
100	30	16,574	-59.8		262	15.5
80	30	17,972	-58.4		265	5.1
60	30	19,793	-55.4		77	3.3
50	30	20,961	-53.4		70	7.0
40	29	22,404	-51.7		77	9.9
30	29	24,275	-50.2		75	13.4
25	28	25,469	-48.7		86	13.4
20	27	26,942	-46.7		89	13.6
15	21	28,869	-43.2		81	15.9
10	5	31,600	-38.5			

BROWNSVILLE, TEX. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	25.3	93	149	3.7
1,000	31	121	25.9	86	159	9.7
950	31	573	23.6	82	168	17.5
900	31	1,044	21.1	77	165	17.3
850	31	1,538	18.4	70	169	17.1
800	31	2,056	15.6	66	161	13.4
750	31	2,597	12.5	62	156	11.3
700	31	3,179	9.4	58	146	8.5
650	31	3,782	5.8	57	136	7.8
600	31	4,442	1.9	54	117	6.8
550	31	5,127	- 2.1	52	107	6.0
500	31	5,892	- 6.5	47	91	5.8
450	31	6,702	-11.5	43	76	5.2
400	31	7,604	-17.2	38	73	6.0
350	31	8,592	-23.9	32	67	5.1
300	30	9,699	-32.1		62	5.1
250	30	10,961	-41.8		55	7.6
200	29	12,436	-54.0		28	8.7
175	28	13,281	-60.6		27	11.7
150	28	14,226	-67.0		30	13.6
125	27	15,314	-71.0		48	13.2
100	26	16,633	-71.1		61	16.1
80	26	17,967	-67.0		85	24.7
60	25	19,725	-61.8		87	25.6
50	25	20,862	-58.8		90	32.4
40	25	22,274	-55.5		89	35.0
30	20	24,124	-51.4		87	42.6
25	19	25,314	-49.4		88	40.4
20	19	26,782	-47.7		88	40.4
15	18	28,698	-44.2		90	44.1
10	8	31,415	-40.6			

BUFFALO, N. Y. (994 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	182	17.2	84	156	0.6
1,000	30	145				
950	30	581	17.4	71	259	2.3
900	30	1,046	14.9	68	311	5.2
850	30	1,529	13.0	56	284	9.1
800	30	2,037	10.9	48	280	10.7
750	30	2,568	8.6	44	275	13.0
700	30	3,142	5.9	40	279	13.6
650	29	3,739	2.6	39	277	16.7
600	29	4,388	- .8		277	16.5
550	29	5,070	- 5.0		271	17.1
500	29	5,821	- 9.5		278	18.8
450	29	6,618	-15.1		280	20.4
400	29	7,508	-21.4		273	24.5
350	29	8,479	-28.5		274	27.8
300	29	9,566	-36.5		274	29.5
250	29	10,806	-45.4		271	34.8
200	29	12,267	-53.4		275	40.8
175	29	13,122	-55.5		275	36.1
150	29	14,098	-58.5		271	32.1
125	28	15,241	-60.1		275	22.0
100	27	16,631	-60.4		271	14.4
80	26	18,032	-57.9		289	5.1
60	26	19,861	-54.2		53	4.3
50	25	21,034	-52.2		73	5.8
40	22	22,490	-49.8		85	8.7
30	18	24,365	-47.6		90	9.9
25	15	25,572	-45.9		90	12.4
20	13	27,072	-43.2		86	14.2
15	10	29,022	-40.2			
10						

BURRWOOD, LA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	27.3	82	182	4.3
1,000	31	144	26.4	81	173	5.1
950	31	597	23.6	80	160	6.2
900	31	1,067	20.4	75	169	7.2
850	31	1,560	17.4	72	170	6.4
800	31	2,076	14.3	67	177	5.4
750	31	2,615	11.2	65	186	4.7
700	31	3,193	7.8	65	197	3.3
650	31	3,800	4.3	65	188	2.5
600	31	4,449	.5	67	214	1.4
550	31	5,135	- 3.2	60	242	2.1
500	31	5,891	- 7.7	49	238	1.7
450	31	6,705	-12.2	47	342	1.2
400	31	7,596	-17.6	43	343	2.5
350	31	8,582	-24.5	42	356	5.1
300	31	9,687	-32.6	33	353	6.0
250	31	10,947	-42.4		349	9.5
200	31	12,418	-54.1		356	12.8
175	31	13,263	-60.2		8	15.5
150	31	14,212	-65.7		20	13.8
125	31	15,310	-69.3		36	11.9
100	31	16,645	-67.9		59	12.6
80	31	17,990	-65.9		81	14.8
60	30	19,758	-60.0		84	23.7
50	30	20,905	-56.5		87	28.8
40	30	22,329	-53.8		89	30.9
30	30	24,189	-50.7		85	33.8
25	26	25,382	-48.9		86	35.6
20	25	26,854	-47.1		87	36.5
15	19	28,775	-44.1		85	41.0
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CAPE HATTERAS, N. C. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	24.0	94	258	2.9
1,000	31	146	24.3	88	263	5.8
950	31	591	22.2	82	279	8.5
900	31	1,065	19.7	78	277	7.8
850	31	1,557	17.1	75	274	8.2
800	31	2,073	14.2	68	261	9.1
750	31	2,611	11.3	61	252	11.1
700	31	3,190	8.2	59	248	12.4
650	31	3,795	4.9	57	247	14.0
600	31	4,448	1.1	54	250	15.0
550	31	5,136	- 2.8	51	247	15.5
500	31	5,894	- 7.1	50	241	13.4
450	31	6,704	-12.1	47	239	13.2
400	31	7,601	-17.8	44	[illegible]	15.0
350	31	8,587	-24.6	37	228	15.5
300	31	9,692	-32.7		226	16.3
250	31	10,949	-42.8		226	15.5
200	31	12,418	-54.3		229	12.2
175	31	13,264	-59.6		240	10.7
150	31	14,218	-63.8		248	6.6
125	30	15,327	-66.2		231	4.5
100	30	16,679	-65.7		234	2.5
80	30	18,046	-62.8		82	4.9
60	27	19,832	-57.4		84	13.4
50	26	20,994	-54.6		87	18.1
40	22	22,434	-51.8		88	20.6
30	19	24,308	-49.3		93	22.2
25	18	25,507	-47.0		90	22.7
20	14	26,986	-45.4		89	25.8
15	6	28,942	-43.6			
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

AUGUST 1960

ARIBOU ME (993 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	191	12.9	86	234	3.9
1,000	31	129				
950	31	561	14.5	69	282	8.9
900	31	1,019	12.4	66	293	12.4
850	31	1,497	9.8	64	283	15.2
800	31	2,000	7.4	58	283	16.9
750	31	2,529	5.1	46	280	17.7
700	31	3,091	2.5	45	281	21.6
650	31	3,685	- .4	44	277	25.1
600	31	4,324	- 3.7	36	278	26.4
550	31	5,001	- 7.5		279	29.0
500	31	5,744	-12.0		278	31.5
450	31	6,536	-17.5		277	34.4
400	31	7,417	-23.5		273	38.1
350	31	8,380	-30.5		274	39.4
300	31	9,458	-38.6		272	42.2
250	31	10,690	-46.8		268	47.4
200	31	12,149	-52.5		270	51.3
175	31	13,010	-54.0		268	46.6
150	31	13,997	-55.5		271	39.8
125	31	15,156	-56.9		271	33.0
100	31	[illegible]	-56.7		274	22.2
80	30	17,991	-54.8		275	12.8
60	29	19,844	-52.0		319	2.9
50	29	21,029	-50.7		74	3.3
40	29	22,488	-49.1		97	4.3
30	27	24,381	-47.7		89	9.7
25	27	25,588	-46.2		89	9.5
20	25	27,084	-43.5		84	10.5
15	19	29,037	-39.8		95	12.4
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CHARLESTON, S. C (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	13	23.1	97	325	1.6
1,000	30	166	23.4	89	285	3.1
950	30	610	22.2	78	277	5.2
900	30	1,085	19.6	74	282	4.5
850	30	1,576	16.5	73	270	3.7
800	30	2,091	13.8	68	257	4.9
750	30	2,627	11.0	62	254	6.0
700	30	3,207	7.9	61	247	7.0
650	30	3,810	4.6	57	241	7.8
600	30	4,464	1.0	51	240	9.3
550	30	5,151	- 3.2	49	230	10.9
500	30	5,909	- 7.4	46	228	10.5
450	30	6,714	-12.5	42	226	9.3
400	30	7,614	-18.7	37	227	9.3
350	30	8,596	-25.4		225	7.8
300	30	9,697	-33.6		219	7.6
250	30	10,949	-43.7		245	6.8
200	29	12,410	-54.6		226	2.5
175	29	13,255	-59.6		245	1.7
150	29	14,209	-64.3		314	.6
125	27	15,319	-66.7		74	3.1
100	27	16,669	-66.0		83	3.5
80	27	18,032	-63.4		79	8.7
60	26	19,820	-58.5		88	18.3
50	26	20,975	-55.3		90	22.0
40	26	22,409	-52.3		89	23.9
30	23	24,287	-50.0		91	26.6
25	22	25,483	-48.5		91	27.0
20	19	26,962	-46.5		85	30.3
15	15	28,892	-42.4		87	30.7
10	9	31,653	-38.1			
7						

COLD BAY, ALASKA (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	27	9.5	91	211	6.2
1,000	30	100			224	6.2
950	30	525	7.8	84	226	7.2
900	30	970	6.5	80	240	11.7
850	30	1,438	4.7	75	251	14.2
800	30	1,931	2.9	72	253	15.9
750	30	2,449	.6	64	249	18.1
700	30	3,004	- 2.0	62	252	21.2
650	30	3,588	- 4.7	48	255	24.3
600	30	4,217	- 7.9	48	255	26.0
550	30	4,884	-11.8	44	257	27.2
500	30	5,613	-16.3	47	254	32.3
450	30	6,390	-21.2	43	257	32.8
400	30	7,259	-27.1	44	258	38.9
350	30	8,208	-33.8	44	253	39.6
300	30	9,272	-41.6		252	44.9
250	30	10,488	-48.8		254	47.8
200	30	11,943	-51.9		255	37.1
175	30	12,809	-51.2		256	34.8
150	30	13,812	-51.2		257	26.6
125	29	14,998	-51.6		255	22.2
100	29	16,444	-52.0		257	17.3
80	29	17,892	-51.5		258	10.9
60	28	19,760	-51.6		273	2.7
50	28	20,946	-51.1		302	1.4
40	28	22,402	-50.5		94	1.9
30	26	24,285	-49.5		67	2.3
25	25	25,484	-48.3		84	4.1
20	25	26,961	-46.3		78	3.3
15	18	28,889	-43.4		74	7.0
10	13	31,664	-39.3		70	12.6
7	6	34,115	-35.1			

COLUMBIA, MO. (987 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	238	20.0	91	152	4.1
1,000	31	125				
950	31	575	22.4	74	219	11.5
900	31	1,041	20.2	71	251	13.2
850	31	1,533	17.1	70	256	13.0
800	31	2,048	14.1	64	260	10.1
750	31	2,590	11.1	55	264	9.5
700	31	3,164	7.7	50	273	9.1
650	31	3,767	4.2	43	268	10.3
600	31	4,419	.3	46	264	11.7
550	31	5,103	- 3.7	41	265	13.4
500	31	5,859	- 8.0		270	14.2
450	31	6,667	-13.1		276	15.0
400	31	7,559	-18.9		282	16.7
350	31	8,540	-25.9		287	18.1
300	31	9,638	-34.3		284	23.3
250	31	10,889	-43.4		287	29.7
200	31	12,359	-53.3		284	34.4
175	31	13,210	-58.4		286	29.7
150	30	14,170	-62.7		284	27.8
125	30	15,283	-66.1		287	21.6
100	30	16,639	-65.2		285	9.9
80	30	18,008	-61.7		325	1.7
60	28	19,808	-56.8		74	7.0
50	28	20,970	-54.3		83	10.3
40	27	22,407	-52.1		85	12.8
30	27	24,279	-49.7		87	16.3
25	25	25,472	-48.3		88	18.5
20	24	26,947	-45.9		84	17.3
15	16	28,877	-43.3		87	24.3
10	5	31,650	-38.0			
7						

DAYTON, OHIO (983 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	297	18.5	87		0.0
1,000	31	149				
950	31	594	20.4	77	247	3.7
900	31	1,059	18.0	73	263	7.4
850	31	1,547	14.7	73	262	10.3
800	31	2,059	12.1	62	266	11.5
750	31	2,598	9.6	53	264	12.4
700	30	3,169	6.9	42	265	13.6
650	30	3,771	3.7	34	264	14.8
600	30	4,421	.2	35	261	15.3
550	30	5,109	- 3.9	35	263	14.8
500	30	5,860	- 8.7		263	15.5
450	30	6,666	-14.3		269	16.5
400	30	7,554	-20.3		270	17.3
350	30	8,530	-26.9		274	20.2
300	30	9,625	-34.9		276	23.3
250	30	10,875	-43.9		276	31.9
200	30	12,339	-54.0		280	34.0
175	30	13,189	-57.8		281	29.7
150	29	14,151	-61.3		282	24.7
125	29	15,275	-64.1		280	17.1
100	29	16,641	-63.8		276	8.7
80	29	18,019	-60.5		318	2.9
60	28	19,830	-56.2		73	6.0
50	28	20,996	-53.7		83	9.5
40	28	22,437	-51.5		88	11.7
30	25	24,314	-49.1		84	14.8
25	24	25,512	-47.7		83	16.5
20	22	26,996	-44.9		86	17.5
15	16	28,929	-42.0		89	19.0
10	5	31,695	-37.8			
7						

DENVER, COLO. (839 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,611	15.4	54	215	4.7
1,000	31	94				
950	31	539				
900	31	1,011				
850	31	1,501				
800	31	2,021	18.8	43	251	6.8
750	31	2,572	16.0	42	256	7.6
700	31	3,155	12.3	42	271	8.5
650	31	3,769	7.8	41	277	10.1
600	31	4,426	2.7	45	277	10.7
550	31	5,117	- 3.1	49	273	13.4
500	31	5,870	- 8.5	46	265	16.5
450	31	6,678	-14.0	38	263	18.7
400	31	7,565	-20.0		266	22.3
350	31	8,541	-27.2		269	27.6
300	31	9,633	-35.5		269	33.8
250	30	10,873	-45.1		268	40.4
200	30	12,333	-54.3		268	45.5
175	30	13,181	-58.6		266	42.7
150	30	14,141	-62.6		267	39.6
125	29	15,257	-65.3		271	25.1
100	29	16,616	-65.0		263	11.3
80	28	17,985	-60.8		274	2.5
60	28	19,794	-56.0		107	5.2
50	28	20,958	-54.2		92	8.0
40	27	22,395	-52.5		88	11.3
30	24	24,266	-50.0		86	15.0
25	23	25,464	-48.5		92	12.4
20	19	26,937	-46.1		89	18.8
15	7	28,859	-43.1			
10						

DODGE CITY, KANS. (925 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	792	19.1	79	174	6.8
1,000	31	110				
950	31	555				
900	31	1,025	21.5	65	201	15.5
850	31	1,522	21.1	54	225	18.7
800	31	2,044	18.3	50	230	15.7
750	31	2,587	14.7	48	228	9.9
700	31	3,174	10.4	46	230	8.7
650	31	3,781	6.1	44	250	7.0
600	31	4,438	1.5	43	267	5.2
550	31	5,128	- 3.0	39	290	7.8
500	31	5,882	- 7.6	32	278	9.7
450	31	6,687	-12.6		273	11.7
400	31	7,585	-18.8		278	14.8
350	31	8,566	-25.9		279	19.0
300	31	9,663	-34.2		277	23.7
250	31	10,913	-43.7		277	26.2
200	31	12,379	-54.0		277	32.8
175	31	13,226	-59.3		276	31.9
150	31	14,180	-63.9		279	28.8
125	30	15,290	-67.8		285	21.6
100	30	16,631	-67.3		278	10.5
80	30	17,991	-63.1		189	.6
60	30	19,788	-57.1		87	8.5
50	30	20,950	-54.7		90	9.5
40	29	22,386	-52.7		92	13.0
30	27	24,254	-49.9		86	17.1
25	23	25,447	-48.5		84	18.5
20	20	26,925	-45.8		85	19.2
15	16	28,859	-43.3		85	22.0
10						

EL PASO, TEX. (883 MB)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,197	21.6	62	126	1.0
1,000	31	90				
950	31	540				
900	31	1,024				
850	31	1,523	22.0	52	179	3.3
800	31	2,047	19.1	51	200	4.5
750	31	2,595	15.4	54	216	2.7
700	31	3,181	11.2	57	98	.8
650	31	3,791	6.9	58	68	3.9
600	31	4,449	2.3	55	68	8.5
550	31	5,138	- 2.6	53	71	8.9
500	31	5,896	- 6.9	42	73	6.2
450	31	6,706	-11.7	37	59	5.4
400	31	7,605	-17.4	35	32	4.1
350	31	8,593	-24.1		4	5.1
300	31	9,699	-32.1		336	6.2
250	31	10,960	-42.0		314	6.8
200	31	12,432	-53.6		307	8.9
175	31	13,279	-59.8		308	9.9
150	31	14,227	-66.2		302	9.3
125	31	15,317	-71.2		311	6.2
100	31	16,632	-71.4		34	3.5
80	31	17,968	-66.1		85	9.5
60	30	19,738	-60.2		90	16.7
50	30	20,882	-57.4		91	21.2
40	30	22,301	-54.5		88	25.6
30	30	24,156	-51.4		90	28.0
25	30	25,343	-49.9		90	31.7
20	29	26,812	-47.5		89	34.0
15	24	28,728	-44.6		82	36.5
10	5	31,451	-41.1			

ELY, NEV. (811 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,908	9.5	43	184	8.7
1,000	31	122				
950	31	562				
900	31	1,021				
850	31	1,512				
800	31	2,023	15.7	33	184	7.8
750	31	2,569	15.1	28	187	7.4
700	31	3,152	10.9	29	225	9.3
650	31	3,760	6.6	31	232	12.4
600	31	4,416	1.6	32	225	16.5
550	31	5,103	- 3.6	32	243	17.5
500	31	5,858	- 8.9	31	243	22.3
450	31	6,660	-14.2		249	23.7
400	31	7,550	-20.6		249	26.2
350	31	8,528	-27.9		250	34.6
300	31	9,615	-36.2		250	40.4
250	31	10,858	-45.4		251	43.5
200	31	12,317	-54.4		246	46.2
175	31	13,166	-58.4		248	40.2
150	31	14,128	-61.9		251	39.2
125	31	15,252	-63.7		259	23.1
100	31	16,617	-65.1		247	8.4
80	31	17,988	-61.2		239	1.7
60	31	19,790	-56.8		54	9.5
50	31	20,949	-54.7		85	10.9
40	31	22,382	-52.9		78	9.9
30	31	24,246	-50.5		75	13.2
25	29	25,439	-48.8		80	12.6
20	26	26,912	-46.6		82	13.6
15	21	28,835	-43.1		87	14.6
10	9	31,592	-38.3			

FAIRBANKS, ALASKA (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	135	9.9	90	38	1.4
1,000	30	84				
950	30	510	10.5	73	248	4.1
900	30	962	8.1	69	248	5.6
850	30	1,431	5.1	72	235	7.6
800	30	1,924	1.8	73	227	8.2
750	30	2,438	- 1.7	71	223	7.4
700	30	2,987	- 4.9	70	228	6.4
650	30	3,561	- 8.2	66	237	5.8
600	30	4,185	-11.8	60	223	6.2
550	30	4,839	-15.6	55	245	5.8
500	30	5,560	-20.2	53	240	5.8
450	30	6,326	-25.2	50	252	7.4
400	30	7,180	-31.1	46	257	9.1
350	30	8,114	-37.9	41	236	12.6
300	30	9,160	-45.6		249	13.4
250	30	10,354	-52.6		252	15.0
200	30	11,807	-48.5		263	11.5
175	30	12,688	-47.6		262	9.9
150	30	13,705	-48.1		263	8.7
125	29	14,910	-48.4		273	5.8
100	28	16,379	-48.2		265	4.9
80	27	17,842	-47.9		265	2.5
60	26	19,743	-47.8		238	1.6
50	25	20,942	-47.8			.0
40	24	22,419	-47.6		67	2.5
30	23	24,323	-47.0		98	4.9
25	23	25,533	-46.0		90	5.6
20	20	27,037	-43.7		91	6.0
15	13	29,004	-40.4		87	3.9
10						

FLINT, MICH. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	234	15.7	92	187	1.2
1,000	31	148				
950	31	586	18.0	70	214	4.9
900	31	1,048	15.7	69	261	6.6
850	31	1,532	12.9	66	270	8.9
800	31	2,040	10.6	55	268	9.5
750	31	2,573	8.7	43	272	10.7
700	31	3,145	6.0	40	271	12.4
650	31	3,746	2.8	35	275	14.0
600	31	4,393	- .8		272	15.2
550	31	5,075	- 4.9		270	16.5
500	31	5,826	- 9.7		270	17.9
450	31	6,622	-15.3		273	19.2
400	31	7,512	-21.5		277	20.2
350	31	8,482	-28.9		280	21.6
300	31	9,567	-36.7		281	28.0
250	31	10,806	-45.4		280	32.6
200	31	12,266	-53.7		284	36.9
175	31	13,120	-56.2		283	36.7
150	31	14,093	-59.0		282	31.9
125	31	15,230	-61.2		277	22.0
100	31	16,612	-61.5		275	14.8
80	31	18,003	-58.8		292	8.0
60	31	19,825	-54.9		18	3.1
50	31	20,996	-52.9		68	6.2
40	31	22,440	-50.8		89	7.4
30	28	24 325	-48.7		81	10.1
25	27	25,528	-47.5		79	11.3
20	24	27,013	-45.3		85	15.2
15	17	28,961	-41.1		87	19.8
10	7	31,728	-37.1			

FORT WORTH, TEX (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	180	24.2	85	176	3.5
1,000	31	129				
950	31	585	23.1	79	203	14.8
900	31	1,051	21.3	75	207	13.6
850	31	1,545	18.4	72	202	8.2
800	31	2,063	15.2	68	187	5.4
750	31	2,604	11.8	62	188	3.9
700	31	3,183	8.6	57	195	1.7
650	31	3,789	5.1	50	170	1.4
600	31	4,442	1.5	46	163	.6
550	31	5,132	- 2.3	42	150	.8
500	31	5,890	- 6.5	39	120	1.9
450	31	6,704	-11.8		139	2.3
400	31	7,599	-17.5		3	.6
350	31	8,586	-24.3		291	1.4
300	31	9,692	-32.6		319	5.2
250	30	10,948	-42.5		314	7.6
200	30	12,419	-53.8		320	8.7
175	30	13,266	-59.6		330	9.7
150	30	14,218	-65.0		345	9.5
125	30	15,319	-68.9		357	8.2
100	30	16,652	-69.1		27	6.4
80	30	17,999	-65.0		76	10.1
60	29	19,779	-59.0		94	17.1
50	29	20,932	-55.9		91	18.3
40	29	22,362	-53.7		88	21.8
30	27	24,221	-51.1		89	27.2
25	27	25,412	-48.7		88	29.0
20	26	26,889	-46.4		89	28.6
15	16	28,805	-44.6		81	25.3
10	5	31,540	-42.2			

GLASGOW, MONT (932 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	696	14.1	69	79	2.7
1,000	30	93				
950	30	528				
900	30	992	16.7	58	234	1.9
850	30	1,479	15.3	50	254	6.2
800	30	1,990	11.9	51	268	8.7
750	30	2,523	8.0	54	272	11.5
700	30	3,094	4.3	52	266	14.2
650	30	3,687	.8	47	263	18.1
600	30	4,333	- 3.3	49	258	19.4
550	30	5,007	- 7.6	49	254	20.2
500	30	5,752	-12.5	44	254	22.0
450	30	6,541	-17.9	42	253	23.1
400	30	7,419	-24.6	38	252	26.0
350	30	8,377	-31.8		253	25.5
300	30	9,448	-40.4		249	29.9
250	30	10,667	-49.2		247	33.2
200	30	12,113	-53.7		257	34.8
175	30	12,970	-54.0		260	34.0
150	30	13,959	-54.8		261	29.3
125	30	15,120	-56.4		262	23.7
100	30	16,535	-57.0		265	15.0
80	30	17,954	-55.5		275	7.4
60	29	19,802	-53.1		81	1.2
50	29	20,980	-51.9		76	3.5
40	28	22,428	-50.8		82	6.4
30	27	24,310	-48.9		82	7.2
25	25	25,514	-47.6		78	9.1
20	22	26,997	-44.8		75	10.1
15	17	28,926	-41.2		91	10.7
10	8	31,724	-36.9			

GRAND JUNCTION, COLO. (852 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,474	19.0	32	120	7.6
1,000	31	73				
950	31	523				
900	31	999				
850	31	1,496			125	7.8
800	31	2,020	20.2	27	143	7.2
750	31	2,571	17.1	27	209	4.3
700	31	3,157	12.5	32	256	8.0
650	31	3,767	7.3	39	261	11.7
600	31	4,425	2.1	43	256	15.0
550	31	5,110	- 3.5	46	249	16.9
500	31	5,867	- 8.9	42	252	21.0
450	31	6,673	-14.1		259	22.0
400	31	7,560	-19.7		265	27.0
350	31	8,537	-26.8		269	33.0
300	31	9,631	-35.2		267	40.4
250	31	10,877	-44.6		270	39.8
200	31	12,340	-54.1		266	48.2
175	31	13,188	-58.8		264	42.6
150	31	14,145	-63.3		265	37.7
125	31	15,257	-66.3		267	25.6
100	31	16,607	-66.3		269	10.1
80	31	17,972	-62.6			.0
60	31	19,773	-57.1		89	7.0
50	31	20,933	-54.7		93	10.7
40	29	22,371	-52.6		85	14.6
30	28	24,239	-50.1		89	17.3
25	26	25,432	-48.5		87	17.5
20	24	26,907	-46.5		86	19.8
15	17	28,829	-43.7		86	23.5
10	10	31,579	-38.1			

GREAT FALLS, MONT. (887 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,123	13.8	57	232	4.5
1,000	31	97				
950	31	537				
900	31	1,003				
850	31	1,484	14.2	50	243	9.3
800	31	1,994	11.0	52	259	9.7
750	31	2,525	7.8	54	262	9.7
700	31	3,096	4.0	55	259	12.8
650	31	3,690	.1	54	258	15.7
600	31	4,333	- 4.0	49	256	18.7
550	31	5,004	- 8.4	47	259	21.2
500	31	5,749	-13.3	42	258	24.3
450	31	6,540	-18.8	40	256	26.0
400	31	7,414	-25.1	37	256	28.4
350	31	8,371	-31.9		252	31.1
300	31	9,442	-40.2		250	32.1
250	31	10,663	-48.5		254	34.6
200	31	12,114	-53.0		254	36.7
175	30	12,976	-53.5		259	36.9
150	30	13,966	-54.1		257	29.9
125	30	15,132	-55.6		250	24.3
100	29	16,545	-56.8		257	17.3
80	29	17,961	-55.7		256	10.1
60	28	19,801	-53.2		305	1.4
50	25	20,974	-52.1		33	.8
40	25	22,423	-50.5		65	4.7
30	22	24,305	-49.0		81	7.0
25	21	25,504	-47.5		81	8.9
20	19	26,983	-44.8		80	7.4
15	17	28,937	-40.9		75	9.9
10	5	31,631	-39.0			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JULY 1960

GREEN BAY, WIS. (991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	210	15.9	91	238	1.4
1,000--	31	128				
950----	31	569	17.7	77	229	6.6
900----	31	1,030	15.9	75	245	7.6
850----	31	1,514	13.4	72	257	7.4
800----	31	2,023	11.0	64	267	8.2
750----	31	2,557	8.3	57	272	9.1
700----	31	3,127	5.0	54	274	10.5
650----	31	3,727	1.7	49	283	13.4
600----	31	4,370	- 2.0	43	276	15.2
550----	31	5,050	- 5.8	36	277	15.9
500----	31	5,798	-10.4	33	274	17.9
450----	31	6,596	-15.7	32	265	19.2
400----	31	7,480	-21.9		268	21.4
350----	31	8,448	-29.0		271	23.5
300----	31	9,533	-36.8		277	25.1
250----	31	10,771	-46.1		279	29.1
200----	31	12,225	-54.5		284	37.9
175----	31	13,076	-56.7		283	39.6
150----	30	14,045	-58.3		286	34.4
125----	30	15,187	-60.3		280	24.9
100----	29	16,580	-60.4		278	18.5
80-----	29	17,975	-58.0		283	11.7
60-----	29	19,803	-54.4		23	3.5
50-----	29	20,976	-52.6		62	6.2
40-----	29	22,423	-50.7		77	8.0
30-----	28	24,311	-48.3		74	10.3
25-----	27	25,512	-46.9		84	11.5
20-----	23	27,003	-44.5		86	12.8
15-----	17	28,941	-41.3		83	13.6
10-----						

GREENSBORO, N. C. (987 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	273	20.4	96	283	2.1
1,000--	31	162				
950----	31	609	21.7	80	298	5.6
900----	31	1,078	19.7	76	307	6.4
850----	31	1,569	16.9	73	288	6.0
800----	31	2,085	13.9	70	282	8.0
750----	31	2,625	10.6	68	271	8.4
700----	31	3,199	7.2	65	267	9.5
650----	31	3,803	3.8	62	262	10.7
600----	31	4,453	.3	57	264	9.9
550----	31	5,142	- 3.3	51	254	10.5
500----	31	5,895	- 7.8	47	248	10.3
450----	31	6,703	-12.9	41	247	11.1
400----	31	7,595	-19.1	38	248	10.7
350----	31	8,576	-25.9	36	250	11.9
300----	31	9,674	-34.1		244	10.7
250----	31	10,925	-43.4		256	13.6
200----	31	12,391	-54.0		264	12.2
175----	31	13,238	-59.0		267	12.4
150----	30	14,196	-63.9		283	8.0
125----	29	15,306	-66.9		265	4.3
100----	29	16,652	-66.1		279	3.7
80-----	28	18,016	-62.8		62	4.5
60-----	27	19,807	-57.8		82	12.4
50-----	27	20,966	-54.7		84	15.7
40-----	25	22,405	-52.1		89	18.5
30-----	25	24,279	-49.6		88	20.6
25-----	25	25,480	-47.4		89	23.5
20-----	24	26,963	-45.5		94	23.7
15-----	19	28,886	-42.6		91	24.1
10-----	15	31,646	-38.4		86	33.2

HILO, HAWAII (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	11	21.7	89	242	3.7
1,000--	31	143	22.7	81	240	1.7
950----	31	591	20.1	84	77	5.2
900----	31	1,056	17.2	87	77	7.8
850----	31	1,543	14.2	89	76	7.0
800----	31	2,054	11.7	83	77	6.6
750----	31	2,593	10.3	53	86	7.4
700----	31	3,167	8.5	38	94	6.0
650----	30	3,778	5.9		95	5.6
600----	30	4,430	2.4		83	5.8
550----	30	5,119	- 1.9		99	2.9
500----	30	5,882	- 6.6		199	1.9
450----	30	6,689	-12.2		233	4.9
400----	30	7,589	-18.6		245	11.7
350----	30	8,570	-26.0	34	251	18.5
300----	30	9,667	-34.6	31	256	25.1
250----	30	10,915	-44.5		257	33.8
200----	30	12,372	-56.1		260	42.7
175----	30	13,209	-62.3		262	43.1
150----	29	14,149	-66.6		258	37.1
125----	27	15,246	-68.2		241	21.2
100----	23	16,577	-70.5		137	3.9
80-----	21	17,909	-68.3		91	16.1
60-----	19	19,653	-63.6		87	29.9
50-----	19	20,779	-61.2		85	34.4
40-----	19	22,174	-58.0		85	41.8
30-----	18	24,000	-54.9		82	41.4
25-----	16	25,174	-53.3		79	44.9
20-----	14	26,615	-50.8		83	47.6
15-----	13	28,502	-48.5		86	47.6
10-----						

INTERNATL FALLS, MINN. (970 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	360	13.9	86	166	2.5
1,000--	31	102				
950----	31	541	16.9	77	184	5.4
900----	31	999	15.9	72	238	8.5
850----	31	1,484	13.4	70	258	10.1
800----	31	1,992	10.4	67	264	11.5
750----	31	[illegible]	7.5	60	268	14.8
700----	31	[illegible]	4.3	57	270	17.1
650----	31	3,691	.9	52	274	19.4
600----	31	4,333	- 2.7	51	278	18.1
550----	31	5,010	- 7.0	49	275	22.2
500----	31	5,757	-11.6	45	273	23.3
450----	31	6,551	-17.0	39	274	26.8
400----	31	7,432	-23.0	36	274	28.2
350----	31	8,397	-30.1	32	273	32.4
300----	31	9,476	-38.1		277	36.1
250----	31	10,707	-47.4		275	42.2
200----	31	12,156	-54.8		275	44.5
175----	31	13,006	-56.4		276	42.4
150----	31	13,985	-56.5		274	38.7
125----	31	15,140	-57.0		277	29.3
100----	31	16,553	-56.7		274	17.5
80-----	31	17,972	-55.5		278	10.9
60-----	30	19,817	-53.1		344	2.5
50-----	29	20,992	-51.9		26	3.9
40-----	29	22,442	-50.7		61	3.5
30-----	27	24,327	-48.7		77	5.2
25-----	25	25,524	-47.4		74	6.4
20-----	22	27,013	-44.3		79	6.4
15-----	14	28,956	-40.9			
10-----						

JACKASS FLATS, NEV. (889 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,100	21.5	22	50	3.5
1,000--	31	67				
950----	31	515				
900----	31	995				
850----	[illegible]	1,498	24.8	20	173	7.6
800----	31	2,026	21.2	22	192	12.2
750----	31	2,575	17.2	24	200	12.8
700----	31	3,164	12.8	28	205	11.3
650----	31	3,779	8.0	30	205	11.3
600----	31	4,436	3.4	33	206	9.9
550----	31	5,131	- 1.4	30	215	9.5
500----	31	5,889	- 6.4		232	15.2
450----	31	6,697	-12.0		240	18.3
400----	31	7,596	-18.6		248	22.5
350----	31	8,578	-25.9		248	28.6
300----	31	9,675	-34.4		248	32.8
250----	31	10,926	-43.9		245	38.3
200----	31	12,392	-53.6		243	44.1
175----	29	13,244	-58.6		244	41.8
150----	29	14,203	-63.1		243	37.7
125----	29	15,313	-66.4		251	24.7
100----	29	16,661	-66.7		253	9.9
80-----	29	18,021	-63.3		235	2.1
60-----	27	19,813	-57.7		87	7.8
50-----	27	20,970	-55.5		93	9.7
40-----	25	22,396	-54.1		83	12.2
30-----	23	24,253	-51.4		87	18.1
25-----	21	25,436	-50.6		87	23.1
20-----	15	26,905	-48.9		85	23.1
15-----	9	28,803	-47.3			
10-----						

JACKSON, MISS. (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	101	22.6	95	167	1.9
1,000--	31	143	22.9	92	172	2.5
950----	31	588	22.6	80	228	7.2
900----	31	1,063	20.1	76	222	7.0
850----	31	1,555	17.2	75	214	6.2
800----	31	2,071	14.0	74	209	5.8
750----	31	2,609	10.8	70	206	6.4
700----	31	3,188	7.3	67	234	5.2
650----	31	3,791	4.0	61	240	4.9
600----	31	4,441	.7	55	260	3.5
550----	31	5,128	- 3.0	49	248	2.5
500----	31	5,885	- 7.1	43	256	1.6
450----	31	6,693	-12.0	40	345	2.5
400----	31	7,592	-17.9		355	4.3
350----	31	8,577	-24.7	37	339	5.4
300----	31	9,681	-32.7		346	7.8
250----	31	10,939	-42.6		330	9.7
200----	31	12,409	-54.3		332	11.9
175----	31	13,254	-60.0		340	11.7
150----	31	14,205	-65.2		8	10.3
125----	31	15,306	-68.3		15	7.2
100----	30	16,648	-68.0		42	6.8
80-----	30	18,001	-64.0		76	10.5
60-----	30	19,782	-59.0		88	19.0
50-----	29	20,935	-55.9		94	22.2
40-----	29	22,364	-53.2		95	24.7
30-----	28	24,228	-50.6		90	25.1
25-----	27	25,422	-48.8		90	31.7
20-----	26	26,895	-46.5		96	30.1
15-----	22	28,809	-43.7		89	36.3
10-----	6	31,561	-39.5			

JACKSONVILLE, FLA. (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	23.5	96	233	1.7
1,000--	31	164	23.9	87	254	1.4
950----	31	613	22.0	77	232	2.5
900----	31	1,082	19.5	72	214	2.1
850----	31	1,573	16.7	69	214	2.9
800----	31	2,088	13.8	68	218	3.5
750----	31	2,629	11.0	64	229	3.7
700----	31	3,203	7.9	57	223	4.5
650----	31	3,807	4.3	55	221	6.2
600----	31	4,459	.6	54	215	6.6
550----	31	5,144	- 3.5	50	210	7.2
500----	31	5,900	- 7.9	48	216	8.2
450----	31	6,706	-12.6	44	222	6.6
400----	31	7,603	-18.3	41	212	5.1
350----	31	8,587	-25.3	34	214	3.9
300----	31	9,687	-33.6		256	1.7
250----	31	10,940	-43.6		334	2.7
200----	31	12,403	-54.7		21	3.7
175----	31	13,246	-60.2		31	4.3
150----	31	14,197	-64.8		42	5.2
125----	31	15,302	-67.4		51	8.0
100----	31	16,647	-67.0		75	8.2
80-----	30	18,001	-64.4		79	14.0
60-----	29	19,781	-59.1		86	23.5
50-----	29	20,932	-55.8		91	28.4
40-----	28	22,364	-52.6		94	30.5
30-----	26	24,236	-49.7		89	31.1
25-----	26	25,433	-48.1		86	31.5
20-----	22	26,914	-45.9		87	33.8
15-----	17	28,840	-42.9		92	41.6
10-----						

JOHNSTON IS., PACIFIC AREA (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	3	26.6	80	75	13.4
1,000--	31	123	25.7	78	80	14.6
950----	31	576	22.4	78	88	16.5
900----	31	1,044	19.4	76	90	16.9
850----	31	1,535	16.5	73	90	15.9
800----	31	2,049	13.9	66	87	13.6
750----	31	2,590	12.1	49	86	11.1
700----	31	3,168	9.3	39	88	9.3
650----	31	3,775	5.9	37	87	7.8
600----	31	4,431	1.9	35	79	6.0
550----	31	5,125	- 2.1	36	88	2.5
500----	31	5,879	- 6.7	40	185	1.7
450----	31	6,688	-11.9	41	220	4.1
400----	31	7,588	-17.8	39	248	8.4
350----	31	8,574	-24.8	37	266	13.4
300----	31	9,678	-33.0	35	266	18.1
250----	31	10,935	-43.1		259	29.5
200----	30	12,402	-55.1		260	38.9
175----	30	13,243	-61.5		263	43.1
150----	29	14,185	-67.9		266	40.2
125----	29	15,272	-71.5		265	27.6
100----	27	16,590	-71.4		251	2.3
80-----	25	17,914	-68.6		89	19.8
60-----	25	19,656	-63.9		91	34.0
50-----	25	20,783	-60.5		90	38.5
40-----	23	22,185	-57.3		91	44.3
30-----	22	24,022	-53.0		91	50.1
25-----	21	25,208	-50.2		89	51.5
20-----	19	26,670	-47.6		88	47.4
15-----	8	28,585	-45.7			
10-----						

KING SALMON, ALASKA (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	15	9.2	90	201	2.1
1,000--	31	92	9.7	84	206	3.3
950----	31	516	8.0	77	219	4.5
900----	31	963	5.8	75	219	6.4
850----	31	1,429	3.1	73	216	6.4
800----	31	1,919	.7	71	216	7.2
750----	31	2,433	- 1.5	64	230	7.2
700----	31	2,984	- 4.1	57	247	7.8
650----	31	3,560	- 7.3	48	247	10.3
600----	31	4,186	-10.8	42	260	9.3
550----	31	4,846	-14.7	43	254	13.8
500----	31	5,567	-19.2	44	254	16.7
450----	31	6,334	-24.2	40	263	19.2
400----	31	7,193	-29.9	42	269	22.5
350----	31	8,132	-36.5	42	270	26.8
300----	31	9,185	-43.3		259	26.4
250----	31	10,398	-48.2		262	33.2
200----	31	11,869	-48.0		266	30.7
175----	31	12,749	-48.0		264	24.5
150----	31	13,764	-48.7		261	20.4
125----	31	14,962	-49.5		256	15.2
100----	31	16,423	-49.2		248	11.3
80-----	30	17,882	-49.5		265	7.4
60-----	29	19,760	-49.9		245	3.1
50-----	29	20,951	-49.9		268	1.4
40-----	28	22,412	-49.4		345	.6
30-----	24	24,294	-48.5		93	1.7
25-----	20	25,497	-47.2		98	2.9
20-----	15	26,982	-45.2		75	3.5
15-----	8	28,930	-42.6			
10-----						

KOTZEBUE, ALASKA (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	10.4	90	136	0.6
1,000--	30	74	10.8	84	301	1.9
950----	30	498	9.0	74	179	1.9
900----	30	948	6.8	70	153	2.9
850----	30	1,416	4.1	71	166	2.7
800----	30	1,908	1.5	69	181	3.3
750----	30	2,423	- 1.3	65	177	3.9
700----	30	2,974	- 4.2	57	149	2.7
650----	30	3,548	- 7.7	55	149	2.1
600----	30	4,175	-11.2	49	163	1.9
550----	30	4,832	-15.5	43	231	1.2
500----	30	5,552	-20.3	41	238	2.7
450----	30	6,319	-25.6		211	3.3
400----	30	7,171	-31.7		193	2.5
350----	30	8,102	-38.7		186	2.5
300----	30	9,143	-46.4		253	5.1
250----	30	10,337	-51.6		247	6.2
200----	30	11,796	-47.9		249	8.2
175----	30	12,679	-47.2		236	7.8
150----	30	13,699	-47.3		243	8.4
125----	30	14,905	-47.6		243	7.4
100----	30	16,380	-47.3		251	6.0
80-----	29	17,853	-47.4		231	3.1
60-----	29	19,753	-49.3		231	2.1
50-----	29	20,956	-47.7		167	.8
40-----	29	22,428	-47.6		62	1.4
30-----	28	24,335	-46.8		76	4.3
25-----	26	25,535	-46.0		85	5.4
20-----	21	27,025	-44.4		84	6.2
15-----	13	28,892	-42.6			
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LAKE CHARLES, LA. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	23.3	96	59	3.3
1,000--	31	140	24.7	87	119	4.3
950----	31	592	23.3	79	189	7.8
900----	31	1,063	20.9	72	193	8.0
850----	31	1,557	18.0	68	197	7.2
800----	31	2,074	14.8	67	199	6.0
750----	31	2,614	11.6	67	194	4.5
700----	31	3,194	8.2	70	205	3.1
650----	31	3,798	4.8	71	224	3.3
600----	31	4,454	1.1	69	250	3.3
550----	31	5,145	- 2.6	64	276	2.9
500----	31	5,902	- 6.7	57	307	1.4
450----	31	6,716	-11.5	53	51	2.3
400----	31	7,615	-17.0	46	17	2.9
350----	31	8,604	-23.6	41	321	2.7
300----	31	9,714	-31.9	36	325	3.5
250----	31	10,977	-42.0		346	7.0
200----	31	12,450	-53.9		324	8.4
175----	31	13,296	-60.0		323	9.3
150----	31	14,245	-65.6		2	7.2
125----	31	15,343	-69.4		31	9.3
100----	30	16,675	-68.8		59	10.5
80-----	29	18,024	-64.8		85	15.0
60-----	29	19,804	-59.7		91	18.7
50-----	28	20,956	-56.8		90	24.7
40-----	26	22,382	-54.2		94	27.8
30-----	24	24,244	-51.6		92	33.8
25-----	23	25,427	-49.4		91	36.1
20-----	19	26,907	-47.1		92	35.8
15-----	13	28,837	-43.7		86	40.4
10-----	9	31,589	-39.3			

LANDER, WYO. (830 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,696	13.9	45	234	2.5
1,000--	31	89				
950----	31	531				
900----	31	1,002				
850----	31	1,492				
800----	31	2,007	15.6	35	262	2.1
750----	31	2,549	12.8	35	285	4.3
700----	31	3,128	8.7	37	273	8.2
650----	31	3,729	4.4	39	266	15.7
600----	31	4,383	- .4	39	265	20.8
550----	31	5,063	- 5.4	38	261	24.1
500----	31	5,814	-10.8		259	27.0
450----	31	6,605	-16.2		259	28.4
400----	31	7,493	-22.7		259	31.7
350----	31	8,459	-30.0		260	38.9
300----	31	9,539	-37.9		263	45.9
250----	31	10,772	-46.1		266	54.8
200----	31	12,232	-53.2		266	58.3
175----	31	13,085	-56.5		264	54.8
150----	31	14,058	-58.9		262	48.8
125----	31	15,196	-61.3		268	31.5
100----	31	16,573	-62.2		261	17.1
80-----	31	17,962	-59.5		255	5.6
60-----	29	19,780	-55.3		55	4.1
50-----	28	20,950	-53.6		104	5.1
40-----	28	22,390	-51.8		91	10.1
30-----	27	24,265	-49.4		92	11.7
25-----	27	25,463	-47.8		87	13.8
20-----	27	26,944	-45.2		94	15.2
15-----	22	28,887	-41.8		99	13.4
10-----	[illegible]	31,625	-38.8			

LAS VEGAS, NEV. (934 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	660	25.5	23	209	6.8
1,000--	31	54				
950----	31	508				
900----	31	993	28.4	20	219	7.4
850----	31	1,497	25.3	22	230	7.0
800----	31	2,025	21.2	25	221	7.8
750----	31	2,574	16.8	28	207	9.1
700----	31	3,163	12.0	31	196	9.1
650----	31	3,774	7.5	33	197	10.5
600----	31	4,432	2.9	32	203	11.9
550----	31	5,123	- 1.6		212	14.0
500----	31	5,883	- 8.3		228	14.6
450----	31	6,691	-12.4		242	15.7
400----	31	7,587	-18.4		248	19.6
350----	31	8,569	-25.7		250	24.1
300----	31	9,670	-34.2		246	27.6
250----	31	10,921	-43.8		243	33.0
200----	31	12,387	-54.0		242	38.7
175----	31	13,234	-59.3		244	39.6
150----	31	14,188	-64.3		242	36.5
125----	31	15,293	-67.7		247	26.8
100----	31	16,632	-67.7		253	11.1
80-----	30	17,986	-63.6		183	2.5
60-----	29	19,777	-57.9		97	8.7
50-----	29	20,932	-56.1		87	12.2
40-----	29	22,357	-54.1		86	16.1
30-----	29	24,214	-51.1		88	19.6
25-----	29	25,403	-49.6		87	22.3
20-----	27	26,868	-48.2		96	22.5
15-----	13	28,774	-44.9		84	28.4
10-----						

LIHUE, HAWAII (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	36	24.6	79	56	11.1
1,000--	31	147	23.8	80	62	13.0
950----	31	595	20.1	84	76	15.2
900----	31	1,060	16.8	85	81	15.5
850----	31	1,546	13.7	83	81	13.6
800----	31	2,056	11.1	76	87	12.0
750----	31	2,593	9.7	49	91	9.1
700----	31	3,166	8.1	27	97	5.4
650----	31	3,772	5.2		112	4.7
600----	31	4,424	1.1		126	3.7
550----	31	5,112	- 3.5		179	4.1
500----	31	5,866	- 8.7	33	223	6.8
450----	31	6,671	-14.1		246	10.9
400----	31	7,559	-20.5	40	251	16.1
350----	31	8,533	-27.8	39	253	20.6
300----	31	9,623	-36.1		257	27.4
250----	31	10,864	-45.3		260	39.8
200----	31	12,318	-56.1		262	48.8
175----	31	13,156	-61.5		262	52.1
150----	28	14,102	-64.4		264	40.4
125----	21	15,205	-64.9		257	19.0
100----	17	16,554	-67.0		128	4.1
80-----	15	17,899	-66.6		97	20.0
60-----	14	19,659	-62.4		90	33.2
50-----	14	20,791	-59.8		94	36.3
40-----	13	22,196	-56.0		93	40.2
30-----	12	24,034	-53.1		92	45.9
25-----	11	25,213	-51.2		92	48.4
20-----	9	26,679	-48.7			
15-----	7	28,595	-45.4			
10-----						

LITTLE ROCK, ARK. (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	79	22.0	92	223	2.1
1,000--	31	139	22.5	89	216	3.1
950----	31	588	23.6	74	243	8.7
900----	31	1,061	20.8	70	219	7.0
850----	31	1,554	17.4	72	226	6.8
800----	31	2,070	14.0	70	224	5.6
750----	31	2,608	10.9	64	239	6.0
700----	31	3,186	7.8	55	250	5.4
650----	31	3,793	4.9	42	261	4.7
600----	31	4,445	1.4	39	263	4.3
550----	31	5,139	- 2.1		283	3.9
500----	31	5,894	- 6.6		290	4.5
450----	31	6,707	-11.6		286	5.2
400----	31	7,606	-17.7		319	6.2
350----	31	8,592	-24.6		323	7.6
300----	31	9,697	-32.7		328	9.7
250----	31	10,956	-42.4		327	11.7
200----	31	12,428	-53.5		321	14.6
175----	31	13,277	-59.2		330	[illegible]
150----	31	14,231	-64.4		337	10.9
125----	31	15,335	-67.4		341	8.0
100----	31	16,678	-67.0		17	5.1
80-----	31	18,038	-62.8		74	6.0
60-----	31	19,831	-57.6		101	12.0
50-----	30	20,987	-54.7		106	17.1
40-----	30	22,424	-51.9		102	18.1
30-----	30	24,295	-49.6		96	21.6
25-----	29	25,495	-47.6		98	24.3
20-----	26	26,970	-46.2		99	28.2
15-----	18	28,889	-43.4		99	28.2
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

AUGUST 1960

McGRATH, ALASKA (998 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	103	9.1	86	220	1.7
1,000	31	82			233	3.7
950	31	512	9.4	78	223	6.0
900	31	956	6.9	78	221	6.6
850	31	1,424	4.2	77	206	7.4
800	31	1,915	1.2	77	193	8.2
750	31	2,433	- 1.4	74	197	7.6
700	31	2,980	- 4.3	69	198	7.0
650	31	3,560	- 7.2	62	201	8.0
600	31	4,182	-10.6	57	198	7.0
550	31	4,845	-14.6	55	194	5.8
500	31	5,563	-19.3	54	189	6.4
450	31	6,337	-24.4	48	194	7.2
400	31	7,187	-30.5	49	190	7.6
350	31	8,123	-37.3	43	199	7.6
300	31	9,172	-44.7		222	6.6
250	31	10,375	-50.3		244	9.9
200	31	11,838	-47.6		255	14.2
175	31	12,722	-47.0		237	10.1
150	31	13,743	-47.4		250	10.5
125	31	14,948	-48.0		249	9.5
100	31	16,419	-48.2		249	7.8
80	31	17,890	-48.2		249	4.5
60	30	19,788	-48.3		251	2.7
50	29	20,992	-48.4			.0
40	29	22,462	-48.4		72	1.9
30	28	24,355	-48.3		92	2.7
25	27	25,554	-48.0		81	2.9
20	21	27,030	-46.8		80	2.9
15	10	28,981	-45.6			

MEDFORD, OREG. (969 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	401	13.9	68	254	1.0
1,000	31	135				
950	31	578	15.7	59	289	3.1
900	31	1,031	14.6	57	293	2.5
850	31	1,514	13.0	57	315	2.1
800	31	2,022	11.4	45	293	2.7
750	31	2,560	8.9	41	258	8.0
700	31	3,128	6.0	38	246	12.6
650	31	3,729	2.8	28	264	14.2
600	31	4,376	- 1.1	27	267	17.1
550	30	5,054	- 5.5	28	270	20.0
500	30	5,805	-10.5		271	23.5
450	30	6,601	-16.6		272	24.5
400	30	7,484	-23.0		273	27.0
350	30	8,448	-30.3		272	31.7
300	30	9,528	-38.4		270	33.4
250	30	10,758	-47.4		268	35.4
200	30	12,207	-54.4		264	40.2
175	30	13,029	-56.4		259	37.3
150	30	14,002	-57.2		257	34.4
125	30	15,182	-59.4		256	26.2
100	30	16,576	-60.3		258	17.1
80	30	17,974	-58.3		252	6.6
60	30	19,796	-55.5		158	.6
50	30	20,964	-53.5		85	5.1
40	29	22,401	-52.0		92	8.0
30	29	24,272	-50.2		85	10.9
25	28	25,464	-48.7		84	13.4
20	27	26,940	-46.5		86	14.6
15	23	28,857	-43.6		95	14.0

MIAMI, FLA. (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	26.1	85	73	3.3
1,000	31	150	26.2	80	90	7.4
950	31	598	23.2	79	116	11.3
900	31	1,073	20.2	73	123	10.7
850	31	1,565	17.2	69	118	10.9
800	31	2,081	14.3	63	118	8.7
750	31	2,619	11.3	58	115	7.2
700	31	3,198	8.0	54	122	6.8
650	31	3,803	4.6	50	129	6.6
600	31	4,456	1.0	47	114	6.8
550	31	5,144	- 3.3	48	113	7.8
500	31	5,899	- 7.7	46	115	6.8
450	31	6,707	-12.8	43	122	6.2
400	31	7,603	-18.5	38	104	4.1
350	31	8,586	-25.2	35	77	2.9
300	31	9,687	-33.8		64	3.9
250	31	10,938	-44.2		53	3.1
200	31	12,395	-56.0		41	5.1
175	31	13,233	-61.8		32	5.1
150	31	14,175	-66.5		40	5.2
125	31	15,273	-68.8		63	7.2
100	30	16,610	-69.2		80	12.4
80	30	17,947	-67.0		81	19.0
60	30	19,702	-62.2		90	31.1
50	28	20,840	-58.4		91	36.1
40	27	22,252	-54.9		95	38.3
30	25	24,109	-51.1		91	40.6
25	23	25,296	-49.1		89	40.0
20	21	26,766	-46.6		90	40.8
15	19	28,681	-44.4		86	47.6

MIDLAND, TEX. (916 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	871	21.4	75	137	5.8
1,000	31	104				
950	31	555				
900	31	1,026	21.6	74	158	12.8
850	31	1,522	20.0	67	186	19.0
800	31	2,043	17.5	61	170	8.4
750	31	2,589	13.8	60	129	5.2
700	31	3,171	10.4	52	114	6.0
650	31	3,782	6.3	49	100	4.9
600	31	4,436	2.1	47	94	4.5
550	31	5,123	- 2.2	45	95	4.9
500	31	5,886	- 6.6	38	112	4.1
450	31	6,696	-11.7	35	94	4.5
400	31	7,596	-17.4	33	56	3.3
350	31	8,584	-23.8		11	3.1
300	31	9,692	-32.0		344	5.1
250	31	10,954	-41.7		334	8.9
200	31	12,430	-53.2		332	11.1
175	31	13,279	-59.1		333	10.7
150	31	14,232	-65.0		331	9.1
125	31	15,330	-69.9		355	8.2
100	29	16,650	-70.6		46	7.2
80	29	17,992	-65.4		88	12.0
60	29	19,769	-59.6		94	17.1
50	29	20,919	-56.7		94	22.9
40	27	22,343	-53.9		87	27.4
30	23	24,204	-51.0		89	32.1
25	21	25,396	-49.0		90	33.2
20	20	26,869	-47.1		91	33.8
15	18	28,784	-44.8		84	38.1

MONTGOMERY, ALA. (1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	61	22.8	89	180	1.0
1,000	30	156	23.2	86	194	2.1
950	30	605	22.3	80	234	5.8
900	30	1,075	19.8	77	227	6.0
850	30	1,566	16.9	73	216	6.4
800	30	2,081	14.0	70	216	5.6
750	30	2,618	10.7	69	217	5.4
700	30	3,197	7.2	67	218	4.9
650	30	3,799	3.8	62	240	5.4
600	30	4,451	.3	54	253	5.4
550	30	5,140	- 3.1	43	261	4.9
500	30	5,896	- 7.6	38	262	4.3
450	30	6,700	-12.6	35	272	4.5
400	30	7,601	-18.1		281	5.6
350	30	8,585	-25.0		288	5.2
300	30	9,687	-33.1		299	5.8
250	30	10,943	-42.7		318	7.2
200	30	12,413	-54.0		335	10.5
175	30	13,262	-59.6		340	11.9
150	30	14,211	-64.9		356	8.9
125	30	15,314	-67.8		9	6.4
100	30	16,656	-67.4		41	5.4
80	30	18,009	-64.3		78	9.7
60	30	19,793	-58.8		86	17.5
50	30	20,945	-55.5		89	20.6
40	30	22,378	-52.6		92	25.1
30	30	24,245	-50.2		89	28.4
25	24	25,427	-48.3		89	28.6
20	22	26,902	-45.9		84	30.5
15	14	28,818	-43.3		88	28.6

NANTUCKET, MASS. (1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	14	18.5	91	263	1.2
1,000	31	147	18.8	83	291	1.4
950	31	588	18.6	73	281	3.3
900	31	1,053	16.4	68	280	5.6
850	31	1,538	14.3	63	281	8.5
800	31	2,049	12.3	59	276	13.0
750	31	2,582	9.7	51	274	16.1
700	31	3,159	6.7	48	271	18.5
650	31	3,761	3.7	42	267	21.6
600	31	4,411	.3	38	266	22.7
550	31	5,098	- 3.4	40	262	24.5
500	31	5,853	- 8.0	37	264	26.8
450	31	6,656	-13.4		260	30.1
400	31	7,551	-19.5		257	32.8
350	31	8,531	-26.0	36	254	39.1
300	31	9,629	-34.0		253	44.3
250	31	10,881	-43.8		257	43.9
200	31	12,345	-54.5		255	46.2
175	31	13,191	-59.3		259	42.0
150	31	14,149	-62.3		260	35.2
125	31	15,270	-63.9		263	26.0
100	31	16,641	-62.6		270	17.3
80	31	18,027	-59.5		266	7.4
60	31	19,848	-55.2		60	.8
50	31	21,018	-52.9		89	5.4
40	29	22,463	-50.9		84	8.4
30	28	24,347	-48.5		86	12.0
25	27	25,553	-46.6		86	13.8
20	23	27,035	-44.3		86	15.3
15	16	28,975	-40.7		96	29.0
10						

NASHVILLE, TENN. (997 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	177	21.3	93	178	2.5
1,000	31	148				
950	31	587	22.1	77	245	9.5
900	31	1,065	19.5	72	239	9.3
850	31	1,555	16.3	72	245	9.1
800	31	2,069	13.0	69	249	8.5
750	31	2,604	9.7	68	247	8.4
700	31	3,179	6.1	62	249	8.0
650	31	3,778	3.4	50	258	8.5
600	31	4,429	.1	44	254	7.8
550	31	5,115	- 3.6	37	256	7.6
500	31	5,868	- 8.1	35	266	7.2
450	31	6,672	-13.3	31	273	8.2
400	31	7,567	-18.9	30	287	9.7
350	31	8,549	-25.7		288	11.3
300	31	9,648	-34.0		301	11.9
250	31	10,901	-43.5		307	13.8
200	31	12,367	-54.4		315	22.3
175	31	13,213	-59.5		323	18.7
150	31	14,167	-64.2		323	12.6
125	31	15,275	-66.8		318	8.5
100	31	16,621	-66.7		319	3.7
80	31	17,981	-62.7		54	5.8
60	31	19,771	-58.1		78	11.3
50	31	20,926	-55.4		87	13.2
40	31	22,357	-52.8		91	17.5
30	30	24,231	-49.9		86	19.8
25	30	25,426	-48.4		87	21.6
20	28	26,896	-46.8		90	26.2
15	25	28,814	-43.5		89	26.6
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N. Y. INT. AP, IDLEWILD (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	24	5	19.9	89	341	4.3
1,000	24	155	19.4	82	341	5.1
950	24	597	18.8	69	339	5.8
900	24	1,061	16.7	67	312	5.4
850	24	1,547	14.3	65	291	8.2
800	24	2,058	11.7	59	285	11.1
750	24	2,595	9.2	53	278	13.0
700	24	3,166	6.3	47	271	14.2
650	24	3,769	3.4	39	270	15.9
600	24	4,418	.3		268	15.9
550	24	5,105	- 3.8		264	19.0
500	24	5,858	- 8.9		262	21.2
450	24	6,660	-14.3		258	24.9
400	24	7,551	-20.3		258	27.4
350	24	8,527	-26.9		257	28.0
300	24	9,621	-35.0		249	34.4
250	24	10,869	-44.3		250	36.3
200	24	12,331	-54.5		253	37.5
175	24	13,177	-58.8		255	36.1
150	24	14,139	-61.6		263	29.0
125	24	15,263	-63.8		268	21.0
100	24	16,633	-63.1		276	14.8
80	24	18,017	-59.9		303	4.3
60	24	19,831	-55.7		75	3.7
50	24	20,999	-53.8		88	8.0
40	22	22,441	-51.1		79	9.5
30	21	24,326	-48.4		87	12.6
25	21	25,531	-46.7		87	14.4
20	20	27,020	-44.5		91	16.9
15	13	28,954	-41.0			
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NOME, ALASKA (1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	9.2	85	22	2.5
1,000	31	68			20	1.4
950	31	494	8.3	77	108	2.5
900	31	940	5.7	77	137	3.7
850	31	1,406	3.4	72	153	3.7
800	31	1,896	.8	68	146	4.1
750	31	2,414	- 1.9	65	146	3.7
700	31	2,960	- 4.5	58	130	2.9
650	31	3,538	- 7.7	56	127	2.7
600	31	4,160	-11.3	53	161	1.9
550	31	4,820	-15.7	49	161	2.1
500	31	5,536	-20.2	45	173	2.3
450	31	6,303	-25.5	42	158	2.5
400	31	7,154	-31.6	42	187	1.7
350	31	8,085	-38.3		245	.8
300	31	9,130	-45.3		280	1.7
250	31	10,331	-50.7		280	4.1
200	31	11,792	-47.9		271	7.4
175	31	12,675	-46.9		254	8.2
150	31	13,697	-47.1		249	9.3
125	31	14,902	-47.7		245	7.4
100	31	16,375	-47.7		247	5.6
80	31	17,848	-47.8		242	3.7
60	31	19,747	-48.1		221	1.4
50	31	20,948	-48.1		146	.6
40	30	22,421	-48.0		117	2.1
30	30	24,320	-47.4		83	4.1
25	29	25,522	-46.6		84	4.7
20	26	27,003	-45.0		74	4.7
15	18	28,930	-42.1		80	5.2
10	6	31,654	-39.5			

NORFOLK, VA. (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	9	23.1	86	228	1.2
1,000	31	154	22.9	84	262	3.1
950	31	598	21.7	77	290	5.6
900	31	1,071	19.2	72	284	5.6
850	31	1,561	16.2	72	273	6.6
800	31	2,075	13.4	67	260	7.8
750	31	2,612	10.5	61	256	10.9
700	31	3,188	7.4	54	258	12.8
650	31	3,790	4.1	49	261	13.0
600	31	4,443	.5	48	259	13.8
550	31	5,128	- 3.4	48	253	14.2
500	31	5,883	- 7.7	43	246	14.2
450	31	6,689	-12.6	40	244	15.9
400	31	7,585	-18.7	39	242	16.5
350	31	8,567	-25.4		237	20.2
300	31	9,668	-33.5		231	18.8
250	31	10,921	-43.4		237	19.0
200	31	12,386	-54.5		249	21.0
175	31	13,231	-59.6		259	19.2
150	31	14,185	-63.9		259	12.8
125	31	15,294	-66.3		254	10.1
100	31	16,648	-64.8		252	5.4
80	31	18,019	-62.0		47	2.9
60	31	19,821	-56.8		79	11.7
50	31	20,985	-54.0		81	14.8
40	31	22,427	-51.4		86	17.1
30	28	24,311	-48.2		90	20.2
25	27	25,517	-46.5		88	20.8
20	21	27,004	-44.7		84	22.9
15	19	28,944	-41.5		85	25.1
10	10	31,734	-35.4			

NORTH PLATTE, NEBR. (916 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	848	16.8	81	114	2.1
1,000	31	90				
950	31	534				
900	31	999	18.6	73	144	3.3
850	31	1,492	19.7	56	229	8.5
800	31	2,014	17.8	47	241	11.5
750	31	2,557	14.2	48	246	12.0
700	31	3,143	10.1	48	251	12.2
650	31	3,751	5.9	47	258	14.2
600	31	4,406	1.0	48	263	16.7
550	31	5,095	- 4.2	52	270	18.8
500	31	5,846	- 9.3	44	270	18.7
450	31	6,649	-14.3		267	19.4
400	31	7,539	-20.5		263	24.5
350	31	8,513	-27.5		268	28.4
300	31	9,604	-35.5		272	33.2
250	31	10,849	-44.5		273	41.6
200	31	12,313	-53.3		270	44.1
175	31	13,165	-57.4		268	39.6
150	31	14,129	-61.7		267	36.1
125	31	15,250	-64.3		278	23.9
100	31	16,615	-64.2		263	14.4
80	31	17,991	-60.6		271	3.9
60	31	19,805	-55.7		80	6.2
50	31	20,971	-53.7		75	9.1
40	31	22,413	-51.5		85	11.1
30	31	24,291	-49.0		84	14.4
25	29	25,484	-47.8		86	14.8
20	25	26,965	-45.8		86	17.7
15	22	28,899	-42.6		86	22.0
10	9	31,670	-38.0			

OAKLAND, CALIF. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	13.1	86	293	4.9
1,000	31	111	12.9	84	277	3.9
950	31	550	16.1	59	266	5.1
900	31	1,010	22.4	20	307	7.0
850	31	1,505	20.0		299	5.6
800	31	2,024	17.1		281	5.6
750	31	2,566	13.7		269	5.6
700	31	3,149	10.0		257	5.1
650	31	3,753	6.3		249	6.2
600	31	4,412	1.9		238	6.0
550	31	5,096	- 2.6		248	8.7
500	31	5,857	- 7.8		249	12.4
450	31	6,660	-13.5		254	17.1
400	31	7,555	-20.3		258	20.0
350	31	8,530	-27.7		256	24.1
300	31	9,620	-36.1		253	27.6
250	31	10,862	-45.9		252	36.3
200	30	12,322	-54.3		246	41.6
175	29	13,168	-57.9		243	43.9
150	28	14,130	-60.6		247	38.9
125	28	15,257	-63.7		252	25.6
100	28	16,623	-64.7		259	12.4
80	28	17,993	-61.5		240	3.3
60	28	19,794	-57.0		93	4.5
50	28	20,953	-55.1		89	8.7
40	27	22,386	-53.3		88	12.2
30	24	24,242	-51.1		84	17.3
25	24	25,431	-49.6		88	20.0
20	17	26,900	-47.8		87	22.3
15	10	28,808	-45.4			
10						

OKLAHOMA CITY, OKLA. (970 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	392	21.4	88	172	5.8
1,000	30	125				
950	30	577	22.7	74	189	11.9
900	30	1,044	22.3	59	212	15.2
850	30	1,539	19.6	55	218	9.9
800	30	2,059	16.2	58	236	5.8
750	30	2,600	12.4	58	251	1.0
700	30	3,180	8.9	55	277	1.4
650	30	3,787	5.6	45	236	2.3
600	30	4,441	2.0	40	229	2.1
550	30	5,129	- 1.8	35	270	3.1
500	30	5,891	- 6.2		253	5.8
450	30	6,700	-11.2		261	5.1
400	30	7,602	-17.5		254	7.2
350	30	8,589	-24.3		281	10.9
300	30	9,695	-32.5		290	12.2
250	30	10,955	-42.4		289	12.6
200	28	12,431	-53.1		298	14.8
175	27	13,280	-58.5		298	16.5
150	27	14,237	-63.8		302	15.0
125	27	15,343	-67.8		309	10.1
100	24	16,687	-68.0		360	4.1
80	23	18,041	-64.6		59	4.5
60	20	19,823	-58.3		89	12.4
50	19	20,982	-55.0		86	14.8
40	19	22,417	-52.2		90	17.3
30	18	24,292	-49.4		87	20.4
25	15	25,482	-48.3		84	22.5
20	15	26,958	-46.5		84	26.4
15	12	28,873	-44.1		85	27.0
10	5	31,621	-39.6			

OMAHA, NEBR. (967 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	403	18.7	90	174	4.1
1,000	31	109				
950	31	553	20.2	78	190	7.4
900	31	1,021	20.4	62	219	15.5
850	31	1,514	18.1	55	229	14.4
800	31	2,032	15.3	50	238	12.4
750	31	2,570	11.8	47	252	10.9
700	31	3,150	7.9	47	261	12.2
650	31	3,752	3.7	50	273	12.4
600	31	4,403	- .5	45	279	13.6
550	31	5,085	- 5.1	41	286	14.6
500	31	5,838	- 9.6		281	14.8
450	31	6,638	-14.5		277	16.7
400	31	7,529	-20.7		279	20.0
350	31	8,503	-27.4		275	24.3
300	31	9,595	-35.4		272	29.1
250	31	10,842	-44.3		276	35.0
200	31	12,309	-53.1		275	39.4
175	31	13,162	-57.3		276	37.1
150	31	14,126	-61.6		275	32.4
125	31	15,247	-64.3		279	24.7
100	31	16,613	-63.7		272	12.8
80	31	17,991	-60.3		277	6.4
60	30	19,802	-55.8		74	3.5
50	30	20,968	-53.3		83	6.6
40	28	22,407	-51.4		84	9.1
30	27	24,282	-49.4		86	10.5
25	27	25,481	-47.5		87	12.8
20	24	26,964	-45.0		87	15.0
15	21	28,905	-41.9		85	19.2
10	7	31,650	-38.4			

PEORIA, ILL. (992 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	201	18.5	90	177	1.9
1,000	31	134				
950	31	578	20.4	77	224	8.7
900	31	1,044	18.3	73	254	10.5
850	31	1,533	15.7	66	263	11.5
800	31	2,046	12.9	60	258	12.8
750	31	2,582	10.1	50	264	11.5
700	31	3,158	7.2	47	277	10.3
650	31	3,759	3.6	43	286	15.9
600	31	4,410	.1	42	268	13.4
550	31	5,097	- 3.7	36	264	14.2
500	31	5,849	- 8.5		268	14.8
450	31	6,652	-13.7		269	15.5
400	31	7,544	-20.1		270	16.5
350	31	8,521	-27.0		276	21.0
300	31	9,613	-35.1		282	24.3
250	31	10,860	-44.3		286	31.5
200	31	12,325	-53.1		287	35.8
175	31	13,175	-57.7		287	34.8
150	31	14,138	-61.5		285	27.8
125	31	15,260	-64.3		283	21.2
100	30	16,628	-63.6		287	10.5
80	28	18,007	-61.1		291	4.1
60	27	19,812	-56.5		70	4.5
50	27	20,976	-53.9		83	8.2
40	25	22,418	-51.4		85	11.3
30	25	24,295	-49.5		90	12.8
25	25	25,494	-47.5		87	14.2
20	24	26,976	-45.1		83	16.5
15	22	28,907	-42.1		89	18.7
10	10	31,688	-38.6			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

AUGUST 1960

Standard pressure surface (mb)	PITTSBURGH, PA. (978 MB.)						POINT ARGUELLO, CALIF. (1000 MB.)						PORTLAND, ME. (1015 MB.)						RAPID CITY, S. DAK. (903 MB.)						ST. CLOUD, MINN. (976 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	353	17.0	90	286	0.6	31	113	11.4	97	330	3.1	31	20	16.1	88	300	2.5	31	966	16.3	58	272	2.9	31	316	16.5	90	138	1.9
1,000	31	158					31	114			336	3.3	31	146	17.4	74	322	3.1	31	88					31	109				
950	31	599	18.9	80	247	3.7	31	555	14.2	65	355	5.4	31	584	17.2	63	310	3.5	31	530					31	553	18.5	78	197	6.0
900	31	1,063	16.9	75	269	8.0	31	1,010	21.9	29	17	5.6	31	1,045	14.6	64	300	5.8	31	996			293	3.1	31	1,013	17.4	69	215	8.2
850	31	1,549	14.2	72	275	11.3	31	1,504	20.3	25	13	3.5	31	1,526	12.1	59	279	9.3	31	1,488	18.1	46	256	5.2	31	1,500	15.0	63	225	7.6
800	31	2,059	11.8	64	274	13.6	31	2,025	17.8	23	118	.6	31	2,032	9.9	53	270	11.7	31	2,006	16.0	41	239	8.0	31	2,011	12.3	58	245	8.9
750	31	2,595	8.9	60	273	15.2	31	2,570	14.7	21	195	3.9	31	2,562	7.9	43	269	15.9	31	2,545	13.0	40	238	11.5	31	2,548	9.1	54	258	10.7
700	31	3,168	6.1	51	274	16.5	31	3,152	11.2		196	4.7	31	3,134	5.3	38	275	20.0	31	3,128	8.9	42	259	10.9	31	3,118	5.6	53	266	11.7
650	31	3,768	3.0	47	275	17.1	31	3,762	7.4		197	4.5	31	3,728	2.3		274	23.3	31	3,734	4.1	46	258	15.0	31	3,715	2.1	53	269	14.0
600	31	4,417	-.6	41	275	17.1	31	4,420	3.3		211	7.4	31	4,379	-1.1		276	25.1	31	4,385	-.3	46	262	19.0	31	4,364	-1.5	47	275	16.1
550	31	5,100	-4.5	33	271	16.5	31	5,107	-1.3		223	7.8	31	5,058	-5.3		277	26.0	31	5,068	-5.7	44	263	21.0	31	5,047	-5.6	47	280	17.9
500	31	5,854	-9.1		266	19.2	31	5,872	-6.5		231	8.2	31	5,810	-10.0		273	28.0	31	5,817	-10.9	41	261	21.4	31	5,794	-9.9	37	279	19.8
450	31	6,655	-14.3		264	21.4	31	6,679	-12.0		237	11.1	31	6,605	-15.3		270	30.9	31	6,613	-16.4		259	24.5	31	6,594	-15.4		280	22.0
400	31	7,547	-20.4		265	22.9	31	7,578	-18.5		232	15.5	31	7,495	-21.4		266	34.4	31	7,496	-22.5		257	26.6	31	7,478	-21.8		275	23.5
350	31	8,523	-27.1		267	24.3	31	8,560	-25.9		234	20.4	31	8,467	-28.2		262	38.5	31	8,463	-29.6		255	27.2	31	8,448	-28.6		281	27.6
300	31	9,616	-35.3		266	27.6	31	9,657	-34.5		236	24.7	31	9,556	-36.0		257	48.0	31	9,544	-38.0		257	33.2	31	9,534	-36.8		279	28.4
250	31	10,862	-44.7		270	31.7	31	10,907	-44.0		234	29.7	31	10,800	-45.2		259	56.9	31	10,775	-47.1		262	38.7	31	10,772	-46.1		274	35.6
200	31	12,323	-54.4		276	36.7	31	12,372	-54.0		232	36.7	31	12,259	-54.0		260	56.2	30	12,231	-53.8		264	50.7	31	12,226	-54.5		274	41.8
175	31	13,171	-58.4		278	29.1	31	13,219	-58.9		231	36.5	31	13,111	-56.8		262	53.2	30	13,084	-56.1		267	48.2	31	13,075	-57.1		275	44.5
150	31	14,136	-61.2		280	23.9	31	14,177	-63.3		233	32.8	31	14,081	-59.5		263	43.5	30	14,057	-58.7		268	39.6	31	14,048	-58.1		277	38.3
125	31	15,262	-63.7		276	17.7	31	15,286	-66.9		237	23.9	31	15,219	-60.3		263	32.1	30	15,195	-61.2		268	25.6	31	15,192	-59.7		277	28.6
100	31	16,631	-63.4		269	12.6	31	16,632	-67.0		249	8.5	31	16,606	-60.6		270	21.6	30	16,578	-61.4		267	14.0	31	16,584	-60.2		272	16.5
80	31	18,014	-59.8		302	4.7	31	17,988	-63.5		101	4.1	31	18,006	-58.0		265	8.9	30	17,969	-59.4		279	5.4	31	17,983	-57.5		288	6.8
60	31	19,829	-56.2		76	6.2	31	19,776	-58.2		98	10.9	30	19,836	-54.2		352	.6	30	19,789	-55.4		36	2.1	31	19,815	-54.1		20	1.9
50	30	20,994	-54.0		82	8.9	29	20,927	-56.1		93	11.9	30	21,010	-52.5		92	4.3	30	20,957	-53.3		68	5.4	31	20,988	-52.6		75	4.9
40	29	22,438	-51.3		88	11.5	29	22,351	-54.0		84	17.3	28	22,457	-50.5		85	5.2	28	22,402	-51.6		83	7.6	30	22,434	-50.9		75	7.2
30	26	24,312	-48.9		88	14.0	29	24,208	-51.3		88	23.9	25	24,341	-48.4		77	10.1	25	24,279	-49.6		85	9.9	28	24,317	-48.8		80	8.5
25	24	25,512	-47.4		88	14.6	29	25,397	-49.6		89	24.7	20	25,537	-46.8		87	10.5	25	25,475	-48.4		89	12.0	27	25,517	-47.4		88	9.5
20	23	26,996	-45.1		82	16.9	29	26,863	-47.7		89	26.6	15	27,031	-44.1		88	11.5	25	26,951	-46.4		91	12.8	27	27,000	-44.8		90	12.2
15	21	28,931	-42.2		90	19.0	27	28,773	-44.8		90	28.4	7	28,982	-39.9				22	28,880	-42.6		80	14.2	20	28,945	-40.9		76	11.5
10	18	31,701	-37.4		88	21.6	24	31,510	-40.8		91	30.5							11	31,636	-37.7				5	31,689	-38.1			
7							12	33,921	-37.6																					

Standard pressure surface (mb)	ST. PAUL IS., ALASKA (1008 MB.)						SALEM, OREG. (1010 MB.)						SALT LAKE CITY, UTAH (871 MB.)						SAN ANTONIO, TEX. (987 MB.)						SAN DIEGO, CALIF. (997 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	10	7.8	96	212	4.1	31	61	12.2	89	187	1.7	31	1,288	16.8	49	158	6.2	31	243	24.2	94	145	3.1	31	124	17.6	95	339	2.1
1,000	31	75			225	4.5	31	147	13.4	83	213	.6	31	91					31	126					31	100				
950	31	495	6.4	89	232	7.6	31	576	12.5	80	351	2.7	31	533					31	581	22.8	91	171	9.9	31	538	18.1	73	328	1.2
900	31	940	4.5	86	223	7.2	31	1,032	11.4	73	326	4.1	31	1,007					31	1,048	20.5	86	184	15.5	31	1,008	22.5	33	310	1.9
850	31	1,405	3.3	78	225	7.6	31	1,510	10.4	59	296	5.4	31	1,500	20.7	33	164	7.2	31	1,541	18.3	77	179	14.4	31	1,505	21.9	26	271	4.5
800	31	1,896	1.6	72	238	8.9	31	2,012	8.3	53	283	8.2	31	2,023	18.8	27	192	8.7	31	2,060	15.6	69	170	10.5	31	2,029	19.5	29	230	6.2
750	31	2,412	-.6	68	239	10.3	31	2,542	6.3	44	273	11.9	31	2,569	15.0	28	220	7.6	31	2,599	12.6	63	158	8.7	31	2,570	16.2	30	212	8.4
700	31	2,964	-3.3	63	245	12.0	31	3,106	3.1	43	272	13.6	31	3,153	10.8	31	246	10.5	31	3,183	9.7	59	159	6.0	31	3,165	12.2	35	200	9.1
650	31	3,544	-6.3	55	245	14.4	31	3,700	.4	40	269	17.5	31	3,762	5.6	34	254	14.6	30	3,790	6.4	55	148	3.7	31	3,770	7.8	35	201	9.7
600	31	4,170	-9.7	52	249	16.3	31	4,341	-3.6	38	267	22.3	31	4,415	.4	38	254	17.9	30	4,448	2.4	54	123	1.7	31	4,437	3.3	33	187	8.0
550	31	4,834	-13.6	48	250	19.0	31	5,015	-7.8	36	268	24.5	31	5,101	-4.9	39	253	22.7	30	5,139	-1.8	51	152	1.7	31	5,123	-1.4	32	188	5.8
500	31	5,557	-18.1	44	252	21.8	31	5,758	-12.5	35	270	27.0	31	5,851	-10.4	37	253	26.0	30	5,900	-6.3	48	198	1.7	31	5,891	-6.3		192	5.8
450	31	6,329	-23.3	40	254	23.7	31	6,549	-17.9		271	31.1	31	6,653	-15.5		254	29.5	30	6,712	-11.2	42	145	1.6	31	6,695	-11.5		218	4.9
400	31	7,189	-29.4	41	256	24.9	31	7,425	-24.2		271	33.4	31	7,536	-21.7		256	32.1	30	7,613	-16.8	36		.0	31	7,603	-17.9		216	7.8
350	31	8,129	-36.1	43	255	26.4	31	8,384	-31.5		270	36.3	31	8,506	-28.5		259	37.7	30	8,603	-23.6	34	231	1.2	31	8,589	-24.8		223	10.5
300	31	9,184	-42.5		256	31.7	31	9,458	-39.4		268	37.9	31	9,594	-36.3		255	47.6	30	9,712	-31.7	31	295	2.9	31	9,692	-33.1		233	15.5
250	31	10,400	-47.5		258	36.9	31	10,683	-47.7		266	41.2	31	10,834	-45.5		257	54.2	30	10,976	-41.5		336	5.6	31	10,950	-42.4		232	21.4
200	31	11,868	-49.4		260	32.4	31	12,135	-53.4		267	42.2	30	12,292	-53.7		254	57.9	30	12,453	-53.0		334	7.2	30	12,424	-53.5		227	25.8
175	31	12,743	-49.1		262	27.2	30	12,995	-54.8		263	37.3	30	13,143	-57.4		254	54.0	30	13,302	-59.3		346	6.8	30	13,273	-59.2		223	26.6
150	31	13,755	-49.4		260	22.2	30	13,978	-55.9		262	32.1	29	14,111	-60.6		257	45.5	30	14,254	-65.0		25	8.5	30	14,225	-65.3		221	25.6
125	31	14,948	-50.1		260	16.9	30	15,135	-57.2		261	26.6	28	15,238	-62.5		257	31.7	30	15,353	-69.5		40	11.1	30	15,322	-69.9		233	19.0
100	31	16,405	-50.3		258	12.4	30	16,543	-58.0		264	18.3	26	16,612	-63.3		262	13.2	29	16,681	-69.5		58	12.2	30	16,651	-68.9		245	4.9
80	31	17,860	-50.2		259	9.5	30	17,953	-56.7		265	8.4	22	17,999	-60.0		247	3.3	29	18,023	-65.6		78	15.2	30	17,998	-65.0		105	8.4
60	30	19,737	-49.9		262	4.3	30	19,784	-54.6		158	1.6	22	19,810	-56.4		84	5.8	28	19,795	-59.4		92	22.7	30	19,778	-59.1		100	12.6
50	30	20,928	-49.8		231	2.3	30	20,956	-53.0		97	3.9	22	20,973	-54.4		80	8.5	27	20,941	-56.9		93	25.1	30	20,924	-56.7		88	17.1
40	30	22,388	-49.3		112	1.2	29	22,399	-51.4		83	6.4	21	22,410	-52.7		78	11.3	26	22,363	-54.0		91	30.1	30	22,351	-54.3		86	23.9
30	30	24,278	-48.2		97	2.9	25	24,278	-49.7		82	9.1	21	24,274	-50.7		76	15.3	25	24,216	-50.9		91	38.5	29	24,207	-51.8		88	27.2
25	28	25,479	-47.0		96	2.7	22	25,470	-51.1		87	9.1	20	25,461	-49.2		81	16.1	24	25,407	-49.1		92	39.6	29	25,393	-50.0		90	29.9
20	28	26,962	-44.9		109	3.7	20	26,946	-46.8		81	10.9	19	26,937	-46.6		83	16.9	24	26,877	-46.8		92	38.9	23	26,858	-48.0		90	29.9
15	22	28,890	-41.7		75	5.4	18	28,858	-43.8		84	12.4	13	28,852	-44.0		82	18.3	20	28,789	-44.8		87	41.2	20	28,767	-45.3		87	31.3
10							6	31,572	-40.3										11	31,516	-39.2				11	31,501	-41.1			

Standard pressure surface (mb)	SAN JUAN, P. R. (1016 MB.)						SANTA MONICA, CALIF. (1008 MB.)						SAULT STE. MARIE, MICH. (990 MB.)						SEATTLE, WASH. (1002 MB.)						SHEMYA, ALASKA (1004 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	[illegible]	25.6	83	117	5.1	31	38	17.1	85	354	1.4	31	221	13.6	92	94	1.0	31	125	13.5	85	164	2.3	31	37	9.3	96	248	5.8
1,000	30	143	25.3	78	105	11.3	31	108	16.7	85	41	.8	31	136					31	143			157	1.6	31	70			236	5.8
950	30	592	22.7	76	99	16.5	31	552	18.6	65	96	3.5	31	573	16.5	70	235	5.2	31	575	12.1	80	205	4.5	31	495	7.7	89	260	10.7
900	30	1,063	19.6	74	101	17.5	31	1,013	21.6	29	130	1.0	31	1,033	14.5	68	265	9.3	31	1,027	10.2	79	223	3.7	31	941	6.7	85	260	11.5
850	30	1,554	16.9	69	102	17.1	31	1,508	20.9	23	250	3.7	31	1,515	11.9	63	267	10.7	31	1,502	8.1	76	252	4.3	31	1,410	5.8	77	273	9.7
800	30	2,070	14.8	56	101	15.9	31	2,030	18.6	21	239	6.2	31	2,021	9.9	53	268	12.6	31	2,001	5.9	68	270	6.4	31	1,905	4.0	71	267	9.7
750	30	2,606	11.8	50	103	15.7	31	2,577	15.3	25	220	8.0	31	2,553	7.4	47	265	13.6	31	2,525	3.4	59	279	9.9	31	2,427	1.9	64	272	11.1
700	30	3,189	8.4	44	106	13.6	31	3,162	11.6	26	201	8.4	31	3,122	4.6	47	272	15.7	31	3,084	.6	53	276	12.4	31	2,984	-.7	59	274	13.0
650	30	3,791	4.6	43	106	14.2	31	3,775	7.6	27	204	9.5	31	3,720	1.7	40	271	19.0	31	3,671	-2.5	46	272	14.6	31	3,567	-3.9	52	278	13.4
600	30	4,446	1.2	40	101	12.6	31	4,433	3.4	28	210	8.2	31	4,364	-2.0	40	273	20.2	31	4,308	-6.1	45	269	17.5	31	4,201	-7.1	46	276	14.4
550	30	5,131	-2.3	35	94	11.1	31	5,128	-1.3		213	8.2	31	5,045	-6.3	41	273	21.0	31	4,978	-9.9	44	267	18.8	31	4,870	-11.0	43	279	14.2
500	30	5,893	-6.8	33	91	9.3	31	5,886	-6.5		218	8.5	31	5,792	-10.7	40	280	23.9	31	5,714	-14.5	41	266	20.2	31	5,601	-15.5	39	285	16.9
450	29	6,699	-12.3		96	7.0	31	6,695	-12.0		218	9.7	31	6,588	-16.2	37	277	26.6	31	6,495	-20.1	41	264	22.9	31	6,383	-21.2	36	283	18.3
400	29	7,598	-18.2	32	111	3.9	31	7,595	-18.3		230	11.9	31	7,472	-22.4	38	278	29.7	31	7,367	-26.3	39	266	27.0	31	7,249	-27.3	37	283	21.0
350	29	8,580	-26.0		121	1.2	31	8,579	-25.2		230	15.0	31	8,439	-29.9	38	281	32.4	31	8,319	-33.5		264	29.7	31	8,197	-34.0		286	19.8
300	29	9,677	-34.3		332	1.6	31	9,680	-33.5		237	20.0	31	9,518	-38.4		284	35.2	31	9,386	-40.2		264	31.9	31	9,262	-41.1		288	26.8
250	29	10,926	-44.2		271	5.4	31	10,934	-43.3		235	23.9	31	10,746	-47.7		284	41.8	31	10,611	-47.4		264	35.4	31	10,484	-46.9		287	27.8
200	29	12,383	-56.2		285	7.8	30	12,403	-53.6		234	29.3	31	12,194	-54.7		287	47.6	31	12,067	-52.3		264	37.1	31	11,955	-48.7		292	28.4
175	28	13,221	-61.4		279	6.2	30	13,251	-59.0		232	31.7	30	13,048	-56.5		287	47.8	31	12,930	-52.8		264	33.0	31	12,831	-49.3		286	26.0
150	28	14,166	-65.8		209	3.3	30	14,206	-64.5		235	27.8	30	14,024	-57.3		284	38.9	31	13,923	-53.7		264	28.6	31	13,839	-50.6		285	22.5
125	27	15,264	-69.3		115	4.3	30	15,309	-68.4		236	22.2	30	15,171	-59.2		281	29.3	31	15,091	-55.0		265	22.3	31	15,024	-51.9		281	18.1
100	27	16,582	-72.5		93	10.7	30	16,645	-68.4		245	6.8	30	16,569	-58.4		281	22.2	31	16,515	-55.8		265	15.7	31	16,468	-52.7		286	13.6
80	27	17,900	-69.1		87	23.7	30	17,994	-64.4		125	3.3	30	17,977	-56.7		284	10.5	31	17,937	-54.9		266	9.1	30	17,913	-52.3		284	8.9
60	27	19,644	-63.1		88	38.1	29	19,774	-58.9		102	9.5	24	19,812	-54.1		359	3.1	31	19,783	-53.1		223	1.2	29	19,778	-51.6		291	4.5
50	26	20,773	-59.8		92	40.8	28	20,923	-56.3		89	13.8	23	20,985	-52.5		70	3.1	29	20,960	-52.2		117	2.9	27	20,962	-51.2		243	1.2
40	26	22,179	-56.2		92	43.9	27	22,348	-53.8		88	20.6	17	22,431	-50.9		75	8.4	24	22,410	-50.7		91	4.9	24	22,407	-50.7		301	1.6
30	24	24,023	-52.5		92	46.4	27	24,203	-51.8		87	23.9	16	24,308	-48.7		87	10.1	21	24,287	-49.1		86	9.1	19	24,274	-49.5		53	1.7
25	24	25,208	-50.0		92	45.5	27	25,389	-50.0		89	25.8	16	25,510	-47.2		92	10.5	19	25,490	-48.3		81	9.3	16	25,473	-48.4		109	3.5
20	20	26,670	-47.5		89	45.9	26	26,852	-48.3		91	27.8	14	26,997	-44.7				16	26,973	-45.4		74	10.7	11	26,936	-47.1			
15	14	28,595	-44.8		88	49.4	21	28,758	-45.6		90	28.2							12	28,910	-42.4		92	14.6	5	28,808	-45.0			
10							10	31,485	-40.4																					

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	SHREVEPORT, LA. (1007 MB.)						SPOKANE, WASH. (931 MB.)						TAMPA, FLA. (1018 MB.)						TATOOSH IS., WASH. (1013 MB.)						TOPEKA, KANS. (983 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	76	22.9	92	155	3.3	31	722	13.5	63	176	5.6	31	8	24.3	91	77	4.9	31	31	12.2	94	182	5.4	31	269	20.5	91	186	4.7
1,000--	31	145	23.0	90	178	4.9	31	109					31	161	24.9	84	105	6.2	31	138	12.5	89	213	5.8	31	120				
950----	31	593	22.3	80	217	10.3	31	549					31	605	23.2	75	141	6.6	31	566	11.5	83	259	6.4	31	568	22.0	74	207	12.8
900----	31	1,064	19.9	75	209	8.5	31	1,006	15.9	55	207	9.1	31	1,083	20.4	74	141	5.1	31	1,020	9.5	79	266	7.2	31	1,036	20.8	66	224	17.3
850----	31	1,555	17.1	72	197	6.6	31	1,489	13.1	50	234	9.1	31	1,576	17.4	69	139	4.1	31	1,493	7.7	72	266	7.2	31	1,529	18.0	63	235	14.2
800----	31	2,072	13.9	71	198	6.0	31	1,996	9.4	55	238	8.7	31	2,092	14.5	63	140	2.9	31	1,991	5.3	62	264	7.6	31	2,047	15.0	59	237	11.7
750----	31	2,609	10.5	72	201	6.2	31	2,526	5.5	58	249	10.3	31	2,633	11.7	58	137	2.9	31	2,512	3.0	55	272	9.9	31	2,586	12.0	52	240	8.4
700----	31	3,187	7.0	71	216	5.2	31	3,089	2.0	53	247	11.1	31	3,210	8.6	55	141	3.3	31	3,072	.1	47	271	12.2	31	3,167	8.4	48	264	6.2
650----	31	3,789	3.9	63	222	3.1	31	3,680	- 1.4	53	251	13.4	31	3,816	5.1	51	148	2.9	31	3,656	- 3.0	43	271	13.8	31	3,772	4.3	44	277	7.4
600----	31	4,441	.5	56	216	2.5	31	4,317	- 5.2	51	248	17.5	31	4,470	1.3	46	175	3.5	31	4,293	- 6.8	44	274	16.7	31	4,423	.3	38	285	10.5
550----	31	5,128	- 2.9	47	206	1.6	31	4,993	- 9.1	43	250	21.4	31	5,162	- 2.7	45	183	3.1	31	4,959	-10.8	45	278	19.0	31	5,108	- 4.0		283	10.5
500----	31	5,886	- 7.1	37	107	1.0	31	5,728	-13.6	39	251	22.2	31	5,916	- 7.1	43	180	3.3	31	5,694	-15.6	43	273	21.4	31	5,863	- 8.2		286	10.7
450----	31	6,695	-12.0		39	2.3	31	6,516	-19.0	40	251	23.1	31	6,729	-12.2	41	172	2.5	31	6,473	-20.7	41	277	23.9	31	6,670	-13.2		282	13.8
400----	31	7,593	-18.0		24	2.7	31	7,389	-25.1	43	256	28.4	31	7,624	-17.9	37	181	2.3	31	7,344	-27.0	41	276	27.0	31	7,563	-19.0		279	18.3
350----	31	8,578	-24.8		359	4.5	31	8,346	-32.2	41	255	30.9	31	8,609	-24.7	34	153	3.1	31	8,293	-34.1		273	30.1	31	8,543	-26.1		277	21.8
300----	31	9,680	-33.0		334	5.8	31	9,415	-40.3		255	33.0	31	9,714	-33.0		134	2.5	31	9,357	-40.7		270	32.6	31	9,641	-34.0		278	25.3
250----	31	10,937	-42.8		306	8.4	31	10,638	-47.7		257	37.7	31	10,972	-42.8		126	3.3	31	10,578	-48.2		268	36.5	31	10,894	-43.5		276	33.6
200----	31	12,406	-54.1		313	10.7	31	12,092	-52.5		259	37.1	31	12,442	-54.4		68	3.3	31	12,033	-51.7		269	35.4	31	12,363	-53.4		278	36.5
175----	31	13,251	-60.0		329	10.1	31	12,955	-52.7		261	32.1	31	13,286	-60.1		54	4.5	31	12,898	-52.2		268	31.9	31	13,213	-58.3		279	34.0
150----	31	14,201	-65.3		359	8.5	31	13,950	-53.6		257	28.6	31	14,238	-65.1		38	7.0	31	13,895	-53.4		267	26.2	31	14,174	-62.6		281	28.4
125----	31	15,301	-68.9		15	7.2	31	15,122	-55.1		256	22.3	31	15,342	-67.2		61	8.0	31	15,064	-55.1		268	22.3	30	15,290	-65.4		287	17.5
100----	31	16,631	-69.3		35	5.8	31	16,542	-55.9		258	17.1	31	16,689	-67.1		79	10.7	31	16,487	-55.8		269	14.8	30	16,646	-65.4		283	12.0
80-----	31	17,978	-65.0		73	9.9	31	17,965	-54.7		250	8.4	31	18,038	-65.3		80	15.5	31	17,911	-54.8		263	7.0	30	18,013	-61.8		315	4.3
60-----	31	19,754	-59.6		90	16.1	31	19,813	-52.7		239	1.6	31	19,811	-59.8		89	25.3	31	19,756	-53.5		273	.8	30	19,817	-56.6		75	6.8
50-----	31	20,903	-56.5		93	18.7	31	20,991	-51.8		130	1.4	31	20,959	-56.5		93	29.0	30	20,933	-52.5		108	2.5	29	20,979	-54.2		91	11.5
40-----	29	22,325	-54.1		88	22.9	30	22,441	-50.5		71	4.9	31	22,385	-50.2		91	30.5	29	22,381	-51.3		83	6.2	28	22,421	-52.0		84	12.4
30-----	29	24,180	-51.3		86	27.0	27	24,320	-49.1		82	7.2	30	24,249	-49.8		88	32.6	28	24,258	-50.1		83	10.1	27	24,293	-49.5		88	15.0
25-----	27	25,368	-49.6		88	30.7	26	25,520	-47.6		83	9.3	28	25,445	-47.9		86	32.6	21	25,449	-48.7		93	11.7	25	25,490	-47.8		88	15.5
20-----	25	26,833	-46.9		88	31.7	25	27,001	-45.4		87	9.7	25	26,915	-45.8		88	35.4	17	26,925	-46.5		83	12.4	24	26,968	-45.8		83	18.1
15-----	20	28,755	-44.3		87	31.5	23	28,933	-41.8		89	11.9	20	28,839	-43.8		92	41.0	15	28,864	-43.0		88	15.5	19	28,905	-42.9		86	19.2
10-----							6	31,727	-37.7				7	31,613	-38.4										5	31,648	-40.3			

Standard pressure surface (mb.)	TUCSON, ARIZ. (923 MB.)						WASHINGTON, D. C. (1007 MB.)						WINNEMUCCA, NEV. (870 MB.)						YAKUTAT, ALASKA (1012 MB.)					
					Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	781	23.9	66	146	5.1	31	88	20.8	92	232	0.6	31	1,310	11.3	44	53	1.0	31	12	9.2	95	81	2.9
1,000--	31	79					31	149	21.1	89		.0	31	117					31	111	10.3	92	100	4.1
950----	31	526					31	593	20.6	79	335	3.9	31	557					31	539	9.1	86	136	5.4
900----	31	1,010	25.2	57	168	3.9	31	1,062	18.4	76	311	6.0	31	1,019					31	985	7.3	79	150	5.8
850----	31	1,512	23.1	52	289	1.9	31	1,551	15.5	73	285	8.7	31	1,504	19.3	28	78	2.3	31	1,454	4.7	75	165	5.8
800----	31	2,039	19.6	54	323	2.1	31	2,064	13.0	67	275	10.5	31	2,023	17.3	25	293	1.7	31	1,947	2.4	74	188	5.4
750----	31	2,586	15.7	58	9	1.0	31	2,602	10.1	64	269	12.6	31	2,562	13.4	27	272	4.3	31	2,465	- .4	71	199	6.6
700----	31	3,175	11.7	58	98	2.7	31	3,177	6.9	62	265	13.8	31	3,146	9.0	30	257	9.1	31	3,016	- 3.6	69	208	7.2
650----	31	3,784	7.4	59	94	4.7	31	3,780	3.4	58	266	15.2	31	3,749	4.8	29	243	15.2	31	3,595	- 6.9	64	213	6.8
600----	31	4,447	2.9	56	104	6.2	31	4,429	.0	49	265	16.1	31	4,402	.3	32	245	17.3	31	4,221	-10.7	60	223	6.0
550----	31	5,140	- 1.6	52	111	7.6	31	5,115	- 3.7	44	261	16.1	31	5,083	- 4.6	33	240	19.4	31	4,879	-14.5	53	220	7.8
500----	31	5,901	- 6.0	47	107	6.0	31	5,869	- 8.2	37	263	17.7	31	5,837	- 9.9		252	20.8	31	5,604	-18.8	45	230	7.4
450----	31	6,711	-10.9	44	104	2.7	31	6,675	-13.3	33	260	18.3	31	6,634	-15.5		260	24.5	31	6,372	-24.2	41	231	8.2
400----	31	7,617	-16.6	37		.0	31	7,569	-19.2	33	256	18.8	31	7,521	-21.8		260	27.0	31	7,232	-30.3	40	232	9.1
350----	31	8,606	-23.6	39	260	2.7	31	8,549	-25.9	36	254	22.0	31	8,491	-29.1		257	30.9	31	8,170	-36.8		245	8.7
300----	31	9,714	-31.9	37	235	8.4	31	9,651	-33.9	36	249	26.2	31	9,574	-37.6		257	38.1	31	9,221	-43.8		237	9.9
250----	31	10,976	-41.6		242	13.2	31	10,900	-43.6		252	28.6	31	10,809	-46.4		249	43.7	30	10,429	-49.0		237	15.3
200----	31	12,451	-53.2		246	19.0	31	12,364	-54.2		262	29.7	31	12,266	-53.6		249	50.1	30	11,897	-48.3		259	16.9
175----	31	13,299	-59.4		246	18.7	30	13,214	-59.1		267	29.0	31	13,121	-56.2		249	45.7	30	12,776	-48.4		263	15.3
150----	31	14,250	-65.6		249	15.3	30	14,172	-62.7		264	22.7	31	14,095	-58.5		250	38.5	30	13,790	-49.1		265	15.0
125----	31	15,342	-70.7		241	13.0	30	15,288	-64.9		262	15.7	31	15,233	-61.5		257	29.5	30	14,984	-49.7		266	11.1
100----	31	16,661	-71.0		150	1.6	30	16,650	-64.5		267	10.9	31	16,612	-62.5		261	15.5	30	16,444	-50.2		271	8.5
80-----	31	17,998	-65.8		84	8.0	30	18,024	-61.1		309	2.1	31	17,997	-60.2		255	3.9	30	17,902	-49.5		264	5.8
60-----	31	19,769	-60.0		91	16.1	30	19,830	-56.7		73	6.2	31	19,807	-56.5		93	2.5	29	19,790	-49.4		294	1.7
50-----	30	20,916	-57.1		87	20.0	30	20,994	-54.1		80	10.3	31	20,969	-54.5		88	4.9	28	20,990	-49.3		321	1.2
40-----	30	22,336	-54.8		89	25.8	29	22,434	-51.7		85	12.0	31	22,403	-53.2		93	8.0	28	22,453	-49.1		29	1.0
30 -	29	24,186	-52.1		88	29.1	29	24,315	-48.5		86	15.5	31	24,265	-51.3		79	9.9	24	24,351	-48.7		69	2.5
25-----	28	25,369	-50.6		87	29.1	29	25,520	-47.0		82	16.9	31	25,454	-50.0		82	12.8	24	25,552	-47.8		74	2.9
20-----	27	26,830	-48.4		86	29.9	27	27,009	-44.8		87	18.5	29	26,918	-48.4		90	14.0	23	27,026	-46.6		67	4.5
15-----	23	28,740	-45.0		88	35.0	23	28,944	-42.3		88	21.8	27	28,822	-46.1		90	14.2	21	28,955	-44.7		71	6.0
10-----	8	31,468	-40.1				6	31,689	-37.7				14	31,516	-43.6				11	31,688	-42.1			
7------													5	33,913	-42.1									

Note: All observations scheduled at 1200, G. C. T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant wind speed is biased toward a lower value as the number of observations on which the resultant is based lessens. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun.

AUGUST 1960

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance								
	A M					P M			
	78.7°	75.7°	70.7°	60.0°	*	60.0°	70.7°	75.7°	78.7°
Air mass	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Aug.									
1	0.69	0.81	0.92	1.05	1.33	----	----	----	----
2	.71	.83	.94	1.09	1.28	----	----	----	----
3	.71	.82	----	1.07	1.27	----	----	----	----
4	.70	.79	.91	1.05	----	----	----	----	----
5	.75	.82	----	1.13	1.33	1.09	----	----	----
6	.69	.80	.89	1.05	1.29	----	----	----	----
7	.72	.81	.93	1.09	1.32	.96	----	----	----
10	----	----	.91	1.09	1.33	----	0.94	0.75	----
11	.71	.81	.90	1.06	----	----	----	----	----
12	.81	.91	1.02	1.19	1.35	1.03	----	----	----
13	.71	.79	.93	1.07	1.30	1.02	----	----	----
14	----	----	----	1.07	1.33	1.13	.93	----	----
15	.82	.93	1.02	1.13	1.32	----	----	----	----
16	----	----	----	----	----	1.09	.94	----	----
17	.61	.72	.89	1.03	1.34	1.14	.98	.87	0.78
18	.86	.97	1.07	1.24	1.42	1.23	1.08	.91	.76
19	.68	.80	.94	1.10	1.36	1.12	.91	.79	.68
20	.87	.97	1.08	1.22	1.41	1.19	1.04	.95	.84
21	.80	.92	----	1.18	----	----	1.00	----	----
22	.67	.79	.89	1.09	----	1.08	.95	.85	.74
23	.76	.88	.97	1.13	1.35	1.07	----	.81	.70
24	----	.88	.97	1.14	1.29	----	.94	.83	.71
25	.89	.99	1.09	1.22	1.39	1.17	1.03	.89	.81
26	----	----	----	----	1.27	1.15	.98	.91	.78
27	.69	.81	.93	1.09	1.24	----	----	----	----
28	.82	.93	1.03	1.17	1.27	1.21	1.07	.97	.86
29	.91	.98	1.10	1.23	1.32	1.17	1.01	.88	.78
30	.73	.85	.96	1.06	1.37	1.19	----	.85	----
31	.70	.85	.95	1.09	----	----	1.01	----	----
Averages	0.75	0.86	0.97	1.12	1.33	1.14	1.00	0.87	0.76

TUCSON, ARIZ.

Date	A M					P M			
Air mass	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Aug.									
1	0.72	0.83	0.95	1.09	----	----	----	----	----
17	.69	.79	.92	----	----	----	0.91	0.82	0.69
18	.73	.84	.98	----	----	----	.91	.77	.68
23	----	.85	----	----	----	----	----	----	----
24	----	.90	----	----	----	1.20	1.05	.95	.85
25	.79	.86	----	----	----	----	----	----	----
28	.84	.92	1.04	----	----	----	----	----	----
31	.73	.81	----	----	----	----	----	----	----
Averages	0.75	0.85	0.97	1.09	----	1.20	0.96	0.85	0.73

MADISON, WIS.

Date	A M					P M			
Air mass	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Aug.									
11	----	0.83	0.93	1.02	----	----	----	----	----
12	M 0.35	M .43	M .59	M .80	----	----	----	----	----
13	S .62	S .72	----	----	----	----	----	----	----
15	.94	1.02	1.11	1.23	----	----	----	----	----
					S‡1.39	S‡1.26	S‡1.10	S‡0.94	S‡0.83
Averages	0.64	0.75	0.88	1.02	1.39	1.26	1.10	0.94	0.83

BLUE HILL OBS., MASS.

Date	Sun's zenith distance								
	A M					P M			
	78.7°	75.7°	70.7°	60.0°	*	60.0°	70.7°	75.7°	78.7°
Air mass	4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Aug.									
7	0.60	0.71	0.83	1.03	----	----	----	----	----
9	.89	.99	1.10	1.24	1.42	1.21	1.04	0.91	0.83
12	.61	.79	----	1.12	----	----	----	----	----
17	.53	.64	.76	.95	1.16	H .83	H .67	H .50	H .38
23	.57	.66	.84	.98	----	----	----	----	----
24	----	----	----	----	1.36	1.19	1.07	.95	.85
25	.88	.98	1.12	1.22	1.32	1.13	.96	.82	.71
26	----	----	----	----	1.35	1.12	.90	.74	.62
28	.68	.81	.94	1.18	1.34	1.13	.92	.79	.68
Averages	0.68	0.80	0.93	1.10	1.33	1.10	0.93	0.79	0.68

OMAHA, NEBR.

Date	A M					P M			
Air mass	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Aug.									
4	0.30	0.40	0.57	0.76	I 0.93	H 0.64	----	----	----
10	----	----	----	.69	----	----	----	----	----
11	----	----	----	----	----	----	0.39	0.25	0.17
12	----	----	----	I .58	I .90	.64	.41	.31	----
15	----	----	----	----	----	.55	.38	.23	.14
21	.34	.43	.72	.94	----	----	----	----	----
22	.36	.48	.59	.71	1.04	S .76	S .54	S .39	S .27
23	S .29	S .41	----	----	M .97	----	----	----	----
25	----	----	----	----	----	----	----	----	S .30
26	S .48	S .55	S .69	S .89	S 1.13	.81	.61	.44	.28
27	----	----	----	----	----	.71	.49	.35	----
30	----	----	----	----	----	M .65	M .52	M .32	M .15
31	M .27	M .42	M .57	M .82	S 1.05	.78	.60	.50	.28
Averages	0.34	0.45	0.63	0.77	1.00	0.71	0.49	0.36	0.23

MAUNA LOA OBS., HAWAII

Date	A M					P M			
Air mass	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Aug.									
3	----	----	----	1.48	1.59	1.43	1.30	1.22	1.12
9	1.19	1.27	1.36	1.46	----	----	----	----	----
20	1.16	1.26	1.37	1.49	----	1.46	1.41	1.33	1.27
21	----	----	----	----	1.58	----	----	----	----
22	----	----	----	1.54	----	----	----	----	----
23	1.25	1.34	----	1.54	1.68	1.52	1.41	1.32	1.26
24	1.26	1.31	1.39	1.54	----	----	----	----	----
25	----	----	----	----	1.61	1.46	1.36	1.27	1.19
26	1.22	1.30	1.38	1.50	1.60	1.46	1.35	1.27	1.19
27	1.29	1.35	1.45	1.54	1.65	1.51	1.41	----	1.22
29	----	1.30	1.37	1.49	----	----	----	----	----
31	----	----	----	----	----	1.48	1.37	1.28	1.20
Averages	1.23	1.30	1.39	1.51	1.62	1.47	1.37	1.28	1.21

* Values corresponding to true solar noon.
‡ Interpolated.
H Haze.
S Slight haze - indeterminable.
M Moderate haze - indeterminable.
I Intense haze - indeterminable.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and average daily totals by weeks of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Albuquerque, N.Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill Obs.,Mass.	Boise, Idaho	Boston, Mass	Brownsville, Tex.	Cape Hatteras, N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.
Aug. 6-----	662	318	690	639	622	560	319	205	306	622	697	624	662	650	492	623	382	650
Aug. 7-----	744	551	576	558	586	547	252	133	609	614	678	522	547	470	579	622	408	588
Aug. 8-----	595	444	619	209	483	321	367	133	134	340	680	356	512	714	117	634	483	209
Aug. 9-----	611	534	630	722	237	292	155	306	578	678	651	657	547	706	720	636	461	384
Aug. 10-----	714	599	602	671	315	336	116	516	639	66	629	61	---	692	675	612	395	628
Aug. 11-----	535	506	151	687	269	---	178	535	649	89	609	113	---	417	617	605	561	659
Aug. 12-----	720	552	363	678	546	---	222	174	620	533	616	564	145	726	573	653	476	595
Average-------	655	501	519	595	437	411	230	286	505	420	651	414	483	625	539	626	452	531
Aug. 13-----	714	553	50	663	481	---	382	127	490	361	415	351	289	746	545	---	536	656
Aug. 14-----	714	509	370	633	476	---	340	186	632	445	633	478	343	740	524	512	474	637
Aug. 15-----	682	430	44	317	454	---	138	136	585	435	605	458	643	---	563	---	208	511
Aug. 16-----	498	---	127	608	270	514	122	130	261	355	657	275	591	343	665	558	308	624
Aug. 17-----	715	---	128	546	492	540	180	435	457	612	643	630	647	393	656	601	475	397
Aug. 18-----	732	420	332	---	506	513	265	351	499	568	638	644	613	339	614	543	542	326
Aug. 19-----	700	276	422	---	567	476	149	261	623	289	629	128	552	630	602	552	325	627
Average-------	679	437	210	553	464	511	225	239	506	438	603	423	525	532	596	553	410	540
Aug. 20-----	714	385	186	---	614	460	407	170	628	468	614	461	568	546	179	479	315	331
Aug. 21-----	689	472	572	603	379	516	439	108	613	270	581	324	529	641	285	552	296	571
Aug. 22-----	587	541	267	---	412	217	219	207	583	412	251	360	539	543	475	510	409	557
Aug. 23-----	655	516	341	282	210	521	223	313	268	540	469	483	537	315	314	375	505	559
Aug. 24-----	660	271	352	454	402	444	206	299	---	616	577	614	572	316	475	512	521	512
Aug. 25-----	697	281	425	640	259	313	238	105	252	600	628	596	575	150	631	333	583	591
Aug. 26-----	658	547	514	---	454	350	145	231	621	595	613	562	619	---	606	398	482	499
Average-------	666	431	380	495	390	403	268	205	494	500	533	486	563	418	424	451	444	517
Aug. 27-----	622	510	69	654	513	305	262	342	529	517	632	511	218	303	563	442	342	551
Aug. 28-----	687	310	244	650	363	582	187	264	620	599	625	571	573	631	588	495	447	466
Aug. 29-----	684	423	258	643	285	575	136	346	592	466	585	480	488	559	412	517	324	304
Aug. 30-----	605	442	423	---	356	547	139	196	570	248	591	236	486	630	574	478	301	536
Aug. 31-----	---	498	353	---	528	456	88	72	528	413	567	418	481	718	542	421	521	566
Sep. 1-----	667	507	503	431	457	481	83	103	536	374	557	415	557	676	347	509	432	597
Sep. 2-----	592	490	151	418	507	448	99	235	537	569	572	574	475	410	399	409	504	592
Average-------	643	454	285	559	430	485	142	223	559	455	590	458	468	561	489	467	410	516

1960	Corvallis, Oreg.	Davis, Calif.	Dodge City, Kans.	El Paso, Tex.	Ely, Nev.	Flaming Gorge,Utah	Fort Worth, Tex	Fresno, Calif.	Gainesville, Fla	Glasgow, Mont.	Grand Junction,Colo	Great Falls Mont.	Greensboro N C	Griffin Ga	Indianapolis, Ind.	Inyokern Calif.	Ithaca, N. Y	Lake Charles, La	Lander Wyo
Aug. 6-----	698	674	---	591	---	662	665	566	407	---	723	590	569	684	341	835	560	615	703
Aug. 7-----	678	665	645	705	704	732	659	549	597	433	730	271	584	591	551	813	518	491	705
Aug. 8-----	677	662	524	722	---	727	572	561	510	---	734	610	618	374	583	793	587	535	347
Aug. 9-----	649	667	407	578	549	489	661	554	706	638	487	638	638	391	515	804	609	491	687
Aug. 10-----	548	677	615	559	570	619	348	538	604	635	712	627	562	497	578	782	114	300	557
Aug. 11-----	355	590	602	(613)	577	693	578	530	721	637	735	633	189	301	340	776	676	283	678
Aug. 12-----	538	624	552	711	480	519	605	522	617	577	672	594	257	367	539	782	500	302	600
Average-------	592	651	558	(640)	576	634	584	546	595	584	685	566	488	458	492	798	509	431	611
Aug. 13-----	670	652	537	696	403	455	646	517	68	469	592	611	572	534	537	793	302	133	598
Aug. 14-----	669	650	612	698	669	409	524	541	559	572	669	---	612	483	506	814	288	92	472
Aug. 15-----	404	600	698	694	673	(692)	278	542	658	274	621	289	463	437	362	812	236	509	558
Aug. 16-----	531	610	643	689	713	298	419	518	660	366	569	448	626	687	491	809	601	590	648
Aug. 17-----	655	605	263	646	701	713	544	525	454	616	720	598	426	592	577	818	613	337	588
Aug. 18-----	632	608	691	582	684	697	507	524	685	616	722	597	653	598	561	809	638	551	690
Aug. 19-----	615	620	---	591	630	687	274	515	455	610	710	574	518	571	487	784	133	511	664
Average-------	597	621	574	656	639	(564)	456	526	506	503	657	520	553	558	503	806	402	389	602
Aug. 20-----	651	637	480	565	668	591	618	522	698	504	708	478	544	553	419	770	185	360	627
Aug. 21-----	422	642	660	637	601	671	432	546	---	574	684	532	460	579	527	795	376	170	682
Aug. 22-----	265	640	604	614	466	334	559	574	---	227	111	241	307	347	535	811	311	250	608
Aug. 23-----	169	616	536	686	701	625	482	557	---	397	639	492	260	583	474	736	92	548	717
Aug. 24-----	311	615	415	666	496	559	552	548	---	510	419	414	528	619	469	792	637	419	573
Aug. 25-----	274	612	617	616	668	679	618	497	430	250	671	398	510	339	556	766	528	436	713
Aug. 26-----	421	623	572	597	603	471	377	519	434	534	637	482	155	354	502	774	587	590	638
Average-------	359	626	555	626	601	562	520	537	---	428	553	434	395	482	498	778	388	396	651
Aug. 27-----	614	601	587	563	661	593	545	539	698	500	676	494	386	338	448	774	349	589	667
Aug. 28-----	588	584	558	555	654	653	532	511	657	603	673	511	538	653	463	782	546	229	692
Aug. 29-----	525	590	316	492	658	653	532	505	530	496	671	403	553	671	409	756	352	369	686
Aug. 30-----	572	578	641	535	553	518	606	512	587	409	663	449	557	630	325	726	430	519	599
Aug. 31-----	142	597	656	649	652	341	616	512	413	264	460	329	529	540	549	773	430	---	433
Sep. 1-----	291	597	638	656	278	384	607	505	441	435	466	431	510	584	507	618	399	411	469
Sep. 2-----	529	505	639	617	617	446	603	486	458	504	622	366	496	448	489	556	603	515	569
Average-------	466	579	576	581	582	512	577	510	541	459	605	426	510	552	456	712	444	439	588

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and average daily totals by weeks of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.-Continued

	Laramie, Wyo.	Las Vegas, Nev.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.	Matanuska, Alaska	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Page, Ariz.	Portland, Me.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	Salt Lake City, Utah	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Seattle-Tacoma, Wash.	Shreveport, La.	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Tucson, Ariz.	Washington, D. C. (Obs & Test Dev Ctr)
1960																																					
Aug. 6-----	728	714	557	644	563	697	582	553	255	515	670	523	633	549	562	514	---	483	629	688	607	326	681	456	721	607	669	448	553	628	643	583	512	692	352	580	298
Aug. 7-----	708	670	345	668	591	657	555	588	291	627	675	555	656	467	635	525	---	470	675	---	600	426	673	643	721	612	593	122	622	624	578	627	399	473	396	675	370
Aug. 8-----	654	562	459	464	624	620	645	533	375	734	648	710	602	543	341	479	---	514	---	662	326	381	669	527	691	576	457	674	426	617	569	695	599	461	540	692	513
Aug. 9-----	470	442	380	416	524	585	331	307	524	469	644	680	405	381	665	526	616	337	312	488	704	681	623	512	679	552	556	418	629	618	610	683	511	491	681	522	503
Aug. 10-----	662	532	401	338	475	530	370	618	526	615	670	697	153	330	139	276	665	324	501	665	64	681	422	558	646	463	650	---	157	417	438	616	375	566	558	660	470
Aug. 11-----	679	629	554	671	634	618	690	589	---	607	626	691	551	486	131	286	651	338	674	654	396	675	640	637	676	232	639	---	204	232	407	658	519	628	427	680	478
Aug. 12-----	661	625	452	637	625	653	655	588	---	493	617	666	506	278	490	375	656	144	621	658	509	663	659	649	661	501	628	506	354	465	518	692	425	648	615	689	374
Average-------	652	596	450	548	577	623	547	539	394	580	650	646	501	434	423	426	647	373	569	636	458	547	624	569	685	506	599	434	421	514	538	650	477	565	510	643	429
Aug. 13-----	579	687	453	594	587	678	574	516	---	647	661	572	660	435	356	216	629	250	666	553	470	620	692	390	662	309	616	588	---	262	354	671	346	636	587	676	124
Aug. 14-----	369	702	561	646	610	655	222	558	---	608	598	93	590	422	455	329	465	279	680	676	398	505	698	683	648	286	---	645	---	410	384	591	365	633	433	715	435
Aug. 15-----	617	707	604	678	629	647	683	588	284	667	587	605	399	524	292	309	616	528	432	676	335	601	695	421	356	343	632	653	---	264	424	289	367	535	458	---	535
Aug. 16-----	439	688	439	622	591	646	644	461	199	557	649	525	495	535	361	214	493	523	438	679	614	299	666	594	610	449	650	668	199	112	592	---	610	311	523	679	389
Aug. 17-----	141	705	569	510	493	649	601	175	245	749	637	537	451	471	581	570	145	504	596	715	676	474	663	232	692	462	610	642	584	431	465	615	580	558	---	688	522
Aug. 18-----	670	691	656	253	628	646	290	558	255	751	626	500	514	454	467	540	528	446	504	700	659	672	670	237	686	572	625	547	506	408	320	633	585	566	621	690	606
Aug. 19-----	668	685	540	622	534	645	393	560	382	742	630	623	554	299	213	31	412	277	689	686	348	657	671	191	659	582	634	535	122	348	416	503	428	615	---	676	616
Average-------	497	695	546	561	582	652	487	488	273	674	627	494	523	449	389	316	470	401	572	669	500	547	679	392	616	429	628	611	353	319	422	550	469	551	525	687	461
Aug. 20-----	668	657	489	594	547	619	376	535	509	725	629	303	551	590	459	520	545	378	665	657	216	621	650	397	649	504	643	311	513	483	586	623	453	577	659	578	514
Aug. 21-----	530	545	512	305	494	506	560	599	319	662	377	566	640	362	427	---	643	261	593	478	187	539	462	519	569	417	571	288	494	154	195	185	335	596	332	303	541
Aug. 22-----	451	661	302	536	482	411	595	578	298	731	369	541	631	396	324	337	618	194	648	435	555	547	618	600	366	467	692	515	375	548	459	556	321	590	485	593	376
Aug. 23-----	638	650	655	723	584	538	176	446	356	730	512	395	533	534	540	515	546	365	626	649	486	560	688	480	676	436	691	602	512	124	452	392	364	543	655	635	475
Aug. 24-----	437	673	573	673	551	549	293	534	---	550	449	452	615	597	603	605	373	548	580	630	655	554	633	399	268	361	670	563	599	301	511	246	656	244	173	678	393
Aug. 25-----	647	652	599	614	572	576	558	441	369	692	619	407	628	429	567	546	438	505	624	664	658	622	651	238	662	545	645	596	569	149	364	---	635	586	171	634	561
Aug. 26-----	523	658	580	614	585	593	603	473	80	727	583	563	407	490	602	560	627	490	514	644	643	590	555	622	586	586	591	499	609	378	238	357	598	510	138	584	600
Average-------	556	642	530	580	545	542	452	515	322	688	505	461	572	485	503	514	541	392	607	594	486	576	608	465	539	474	643	482	524	305	401	393	480	521	373	572	494
Aug. 27-----	639	671	573	543	600	639	606	547	86	740	629	576	646	504	534	522	605	435	569	669	502	591	635	30	641	527	658	443	504	462	592	414	426	589	631	585	520
Aug. 28-----	620	659	---	591	551	612	505	474	316	309	621	619	344	537	570	536	171	358	625	678	620	528	663	203	662	250	590	125	563	325	451	400	460	599	620	664	482
Aug. 29-----	638	606	---	636	626	644	549	317	231	392	596	480	545	582	480	463	438	371	387	650	499	616	625	626	637	396	531	547	487	163	402	294	434	466	487	654	538
Aug. 30-----	615	634	---	578	628	642	594	526	449	295	574	419	555	609	318	318	567	505	602	617	432	605	629	204	526	452	558	575	355	265	560	442	409	576	413	---	473
Aug. 31-----	436	398	571	476	634	666	555	547	434	664	579	342	560	458	181	171	583	401	544	466	461	531	620	417	490	579	595	409	109	437	447	413	254	583	367	564	409
Sep. 1-----	444	246	626	581	571	520	540	543	59	734	189	445	619	565	391	462	568	523	619	341	482	565	497	528	318	532	569	321	413	193	418	552	523	578	427	418	519
Sep. 2-----	552	529	566	587	593	610	393	541	207	724	531	420	560	529	543	568	569	536	598	526	600	557	493	527	574	494	590	587	541	484	481	554	588	575	328	---	416
Average	563	535	584	570	600	619	535	500	254	551	531	472	547	541	431	434	500	447	563	564	514	571	595	362	549	461	584	430	425	333	479	438	442	538	467	577	480

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

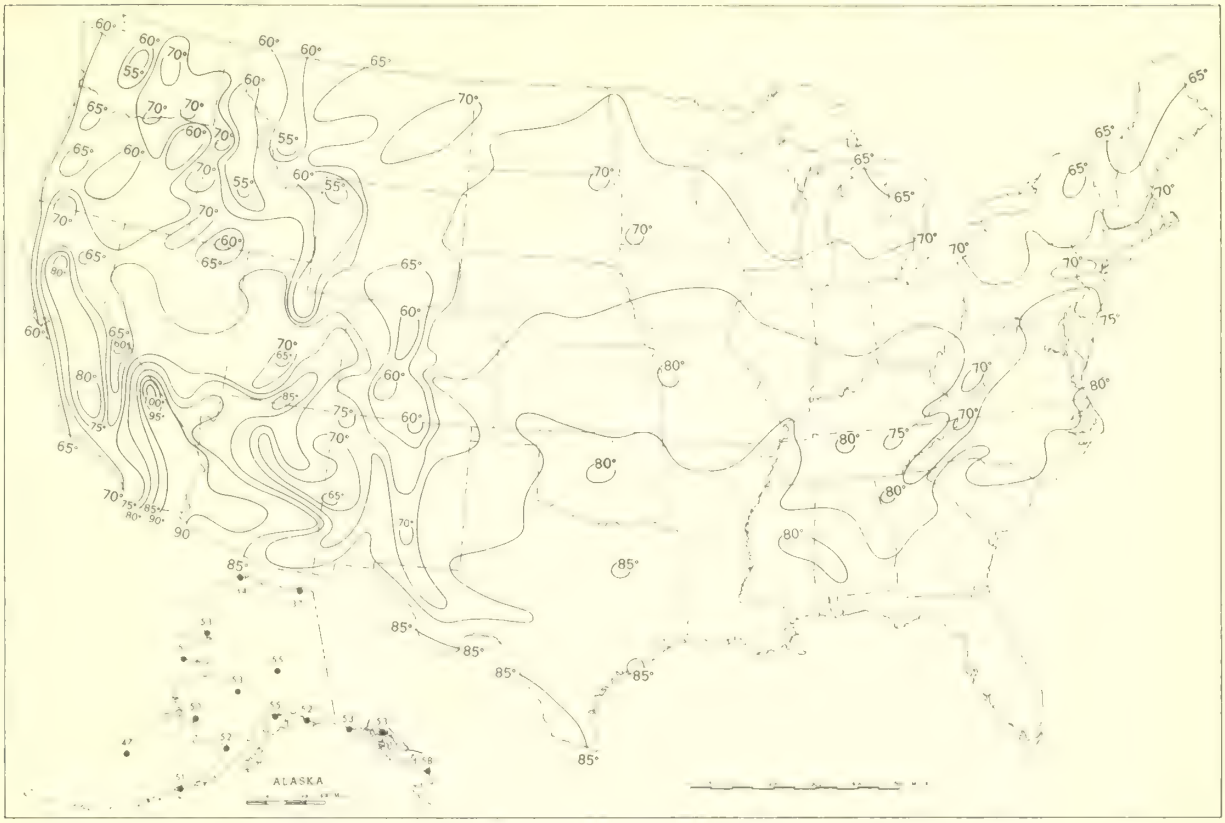
AUGUST 1960

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bismarck, N. Dak.	317	---	287	305	---	---	---	---	316	312	295	297	309	318	302	---	314	305	298	324	336	291	316	287	---	---	307	284	331	288	272
Caribou, Me.	324	325	326	318	305	329	---	---	333	337	336	326	323	312	---	323	312	301	298	---	---	308	---	350	305	297	299	286	292	---	294
Fort Worth, Tex.	314	---	295	298	304	291	298	303	311	323	324	327	312	314	---	---	286	288	313	314	---	267	274	280	276	335	310	---	284	281	282
Green Bay, Wis.	276	---	284	288	305	306	315	303	---	286	306	300	310	297	309	285	291	270	320	288	246	267	---	---	252	270	263	251	269	281	274

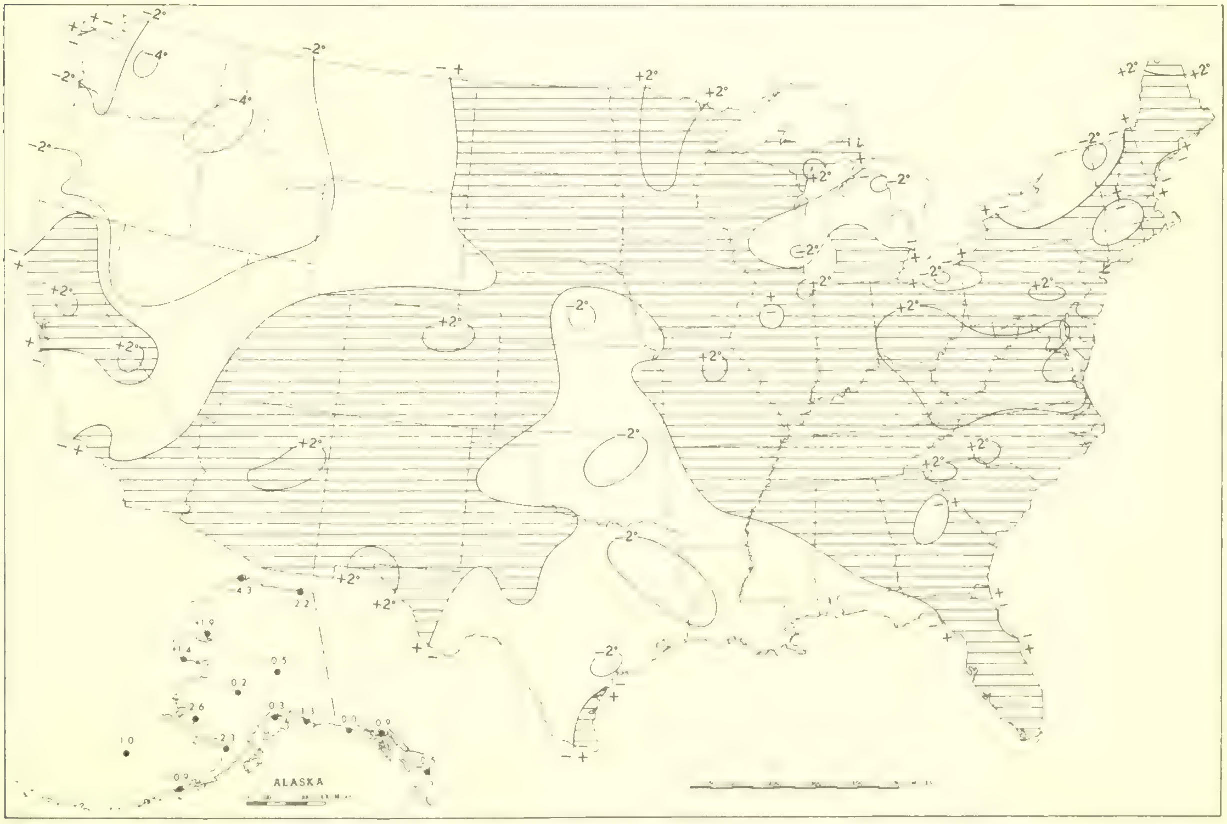
The spectrophotometer measures the total amount of ozone in the atmosphere, i. e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observations can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations; therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational procedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer," Annals of the International Geophysical Year, Volume V, Pergamon Press, 1957.

Chart I. A. Average Temperature (°F.) at Surface, August 1960.

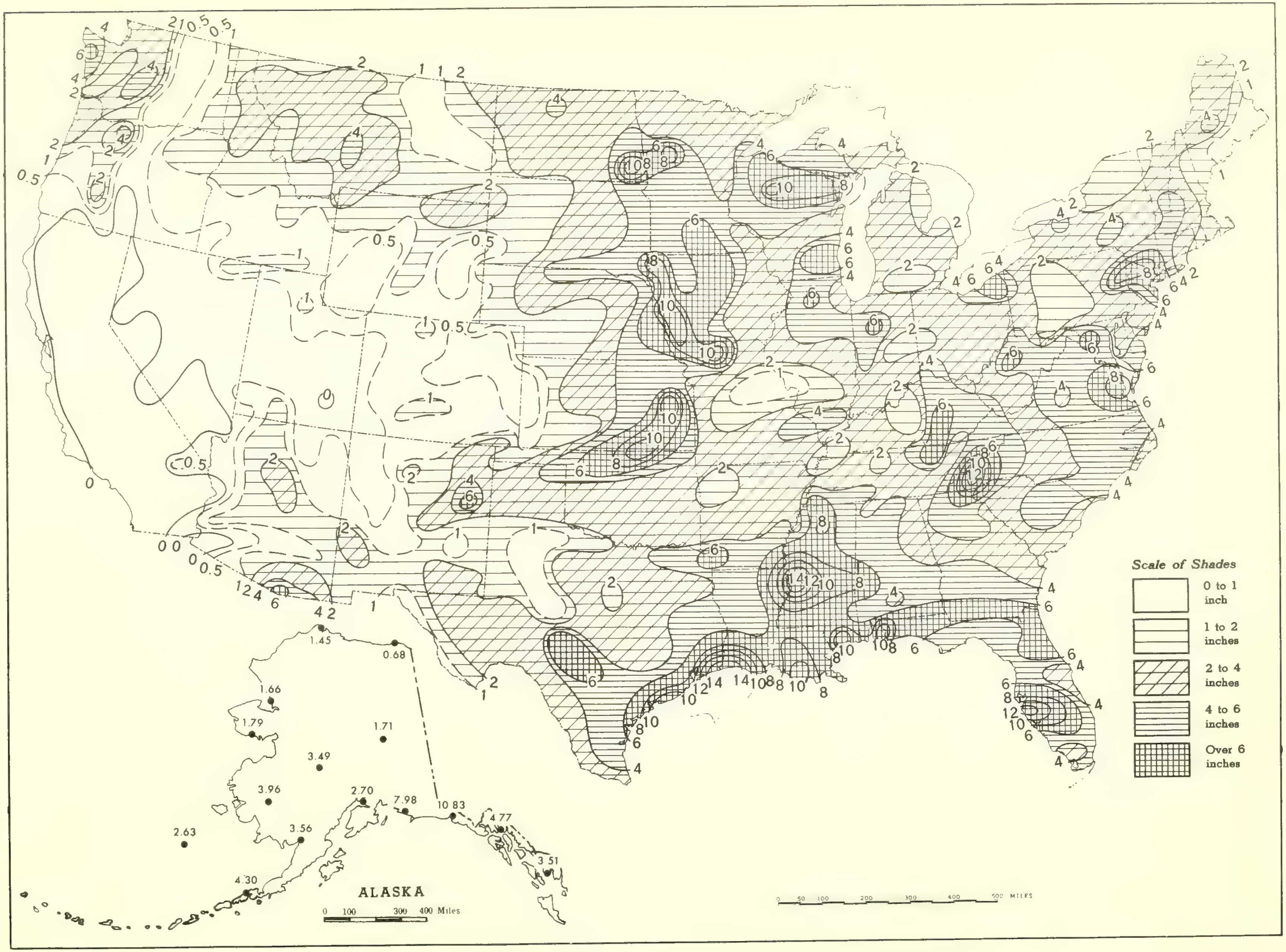


B. Departure of Average Temperature from Normal (°F.), August 1960.



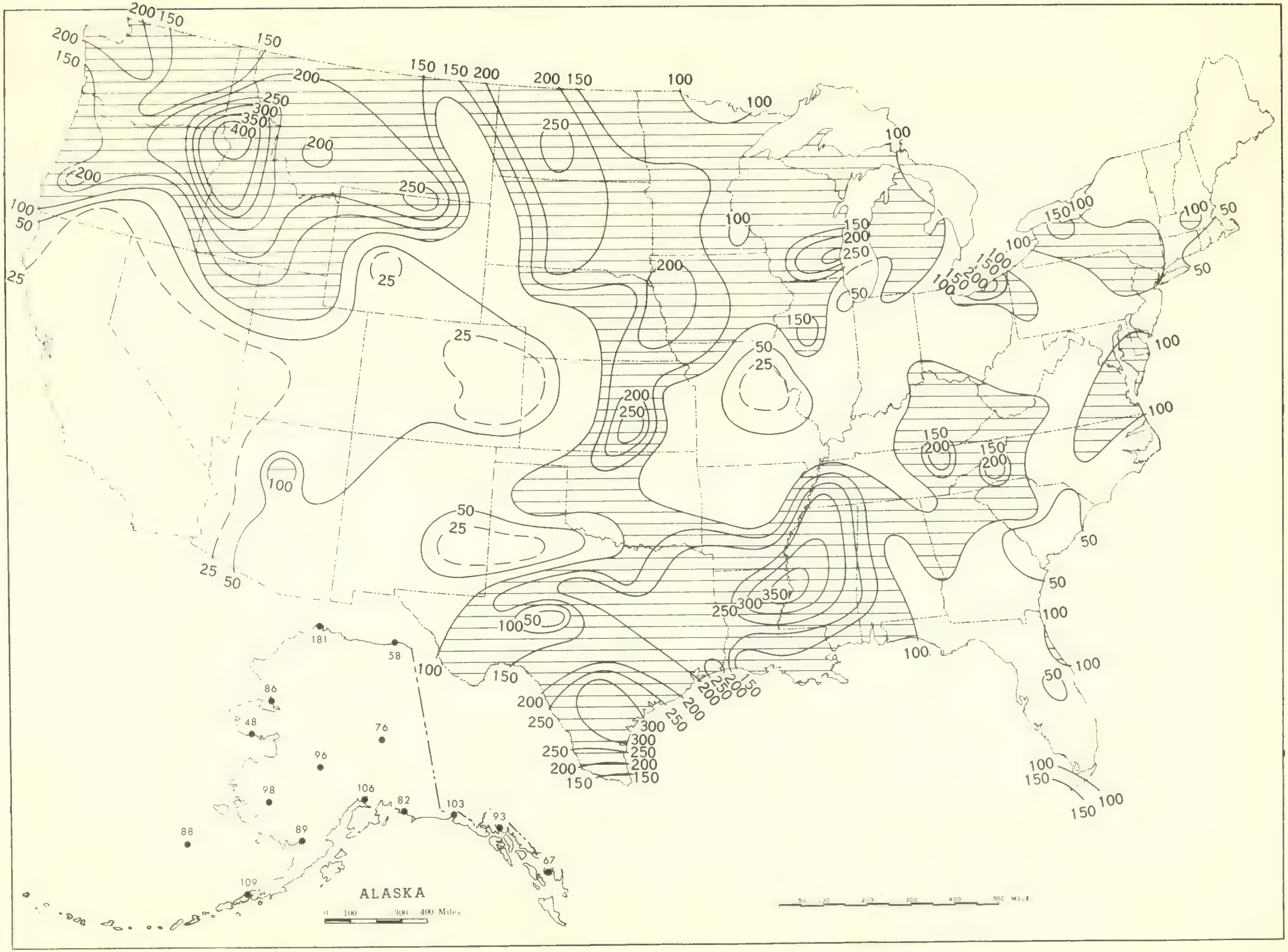
A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), August 1960.



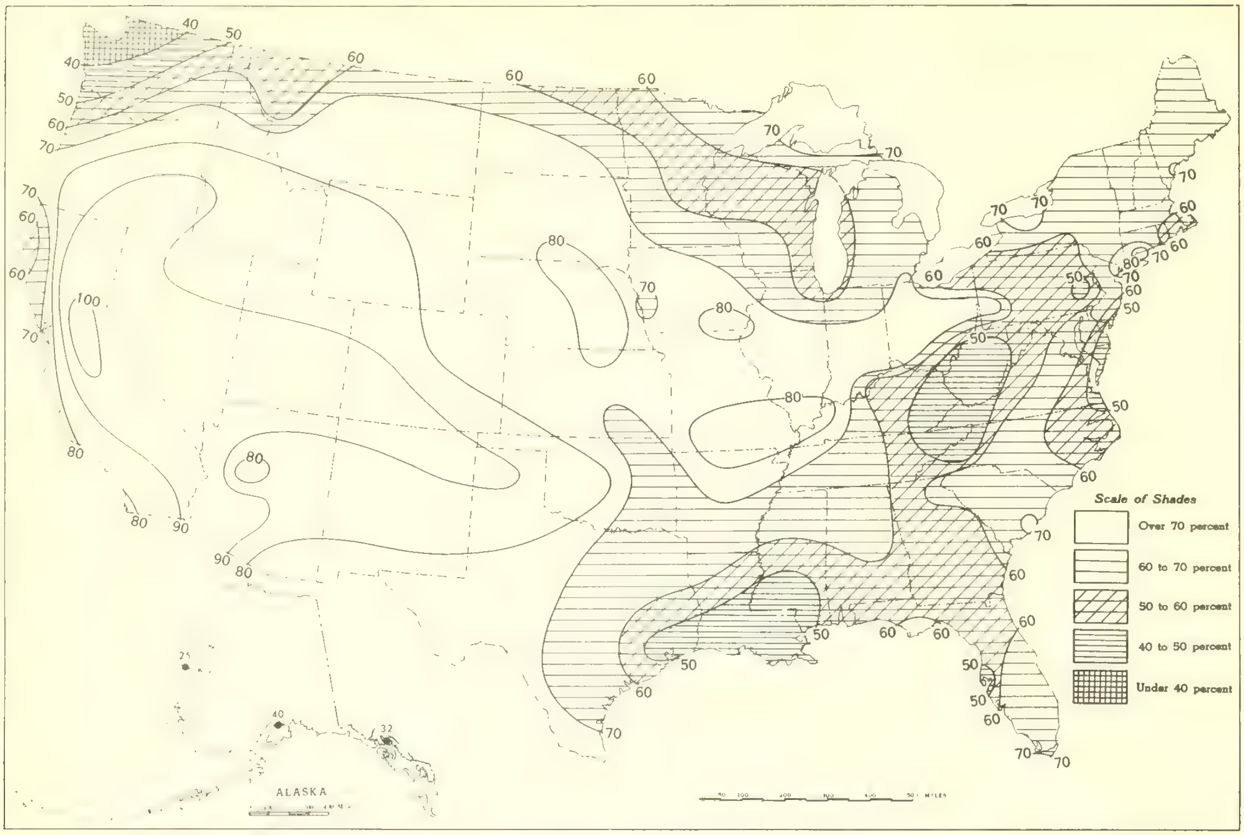
Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, August 1960.

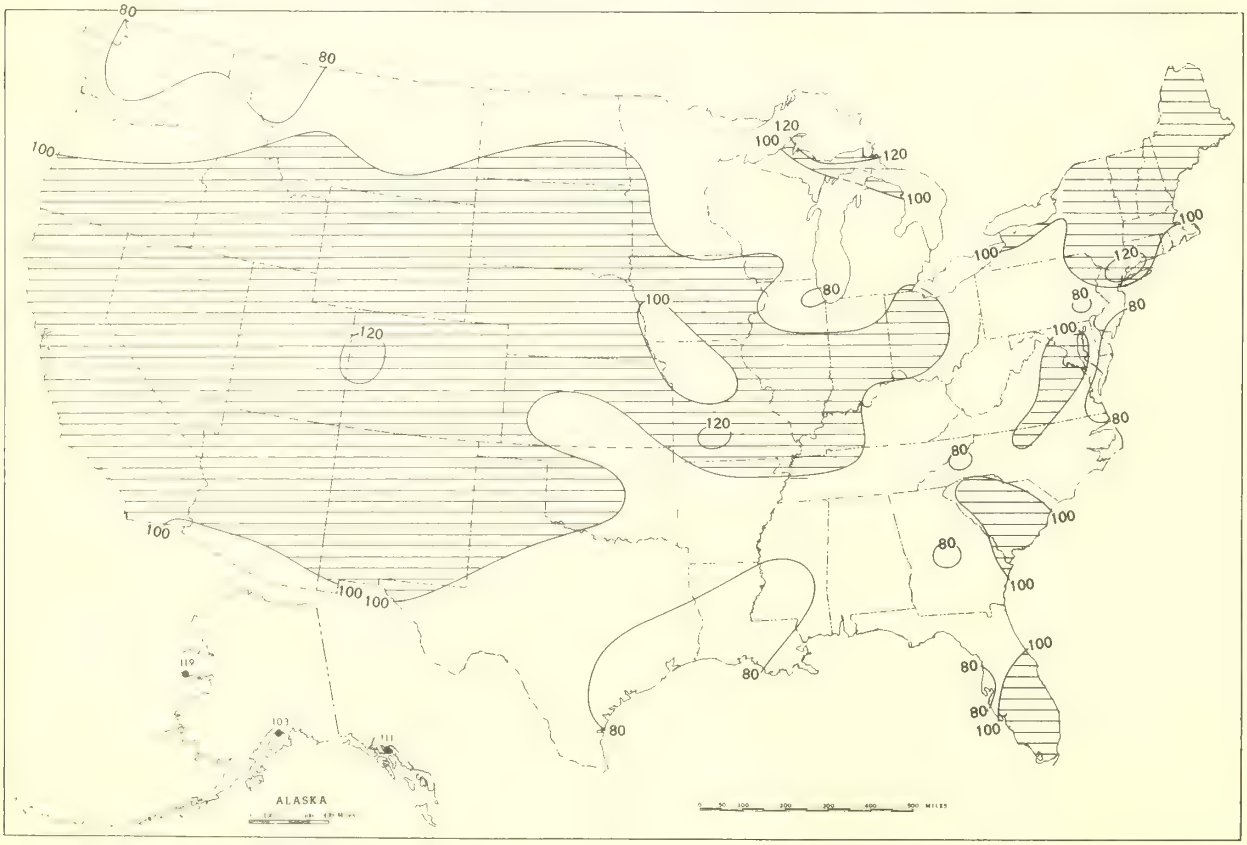


Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart VII. A. Percentage of Possible Sunshine, August 1960

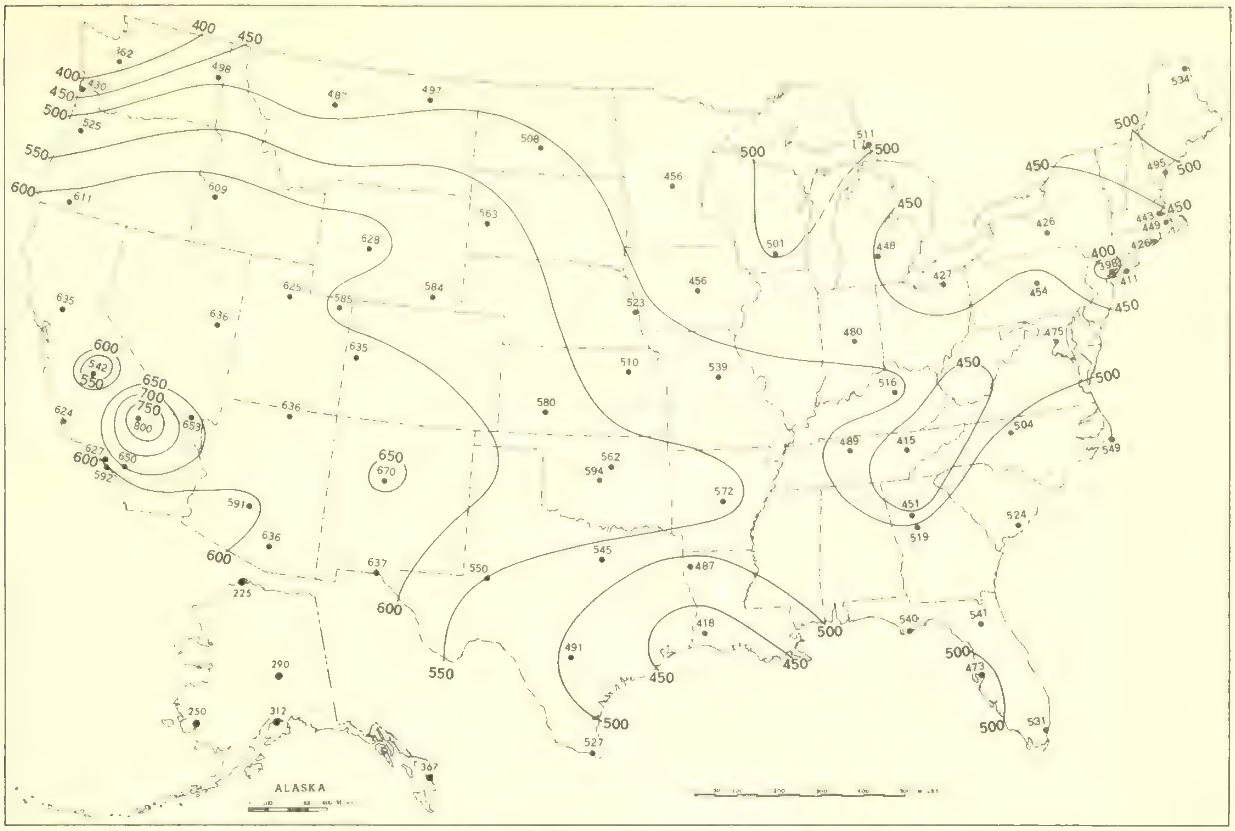


B. Percentage of Mean Monthly Sunshine, August 1960.

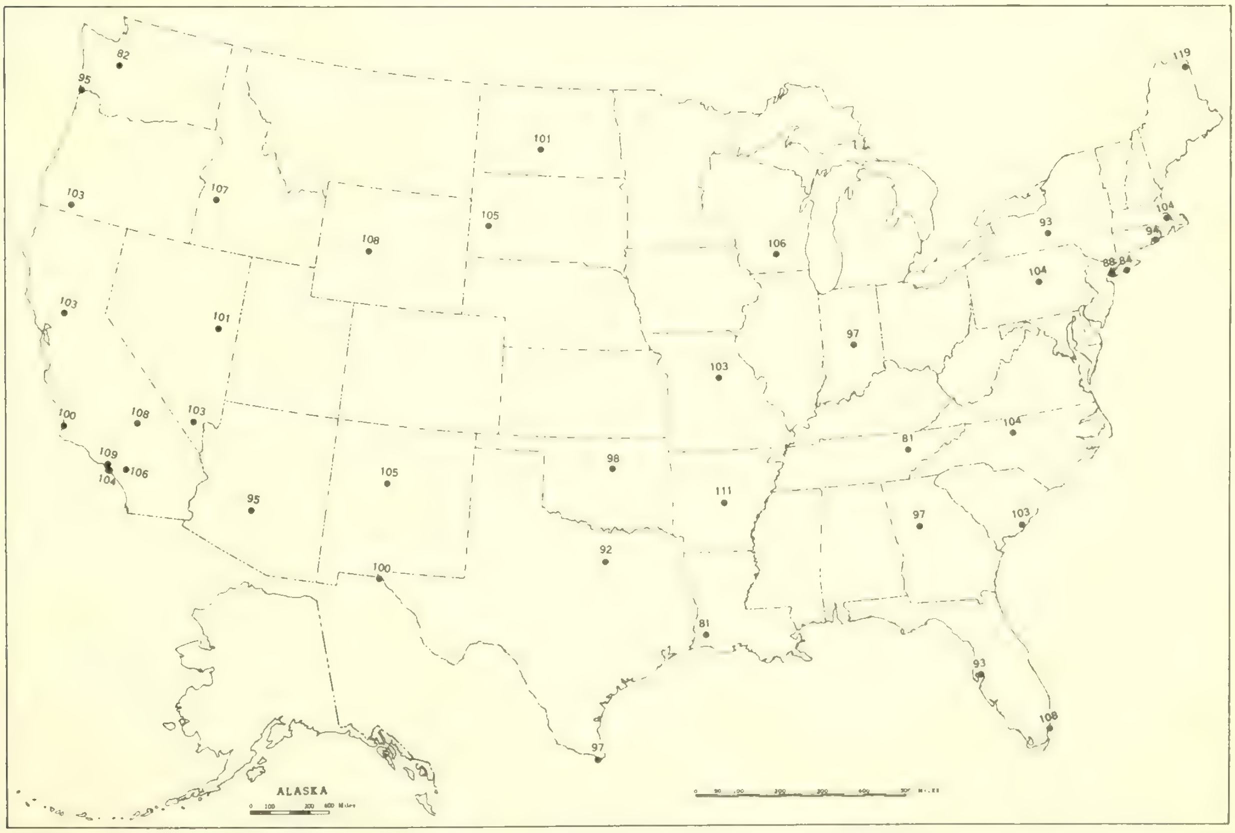


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, August 1960.



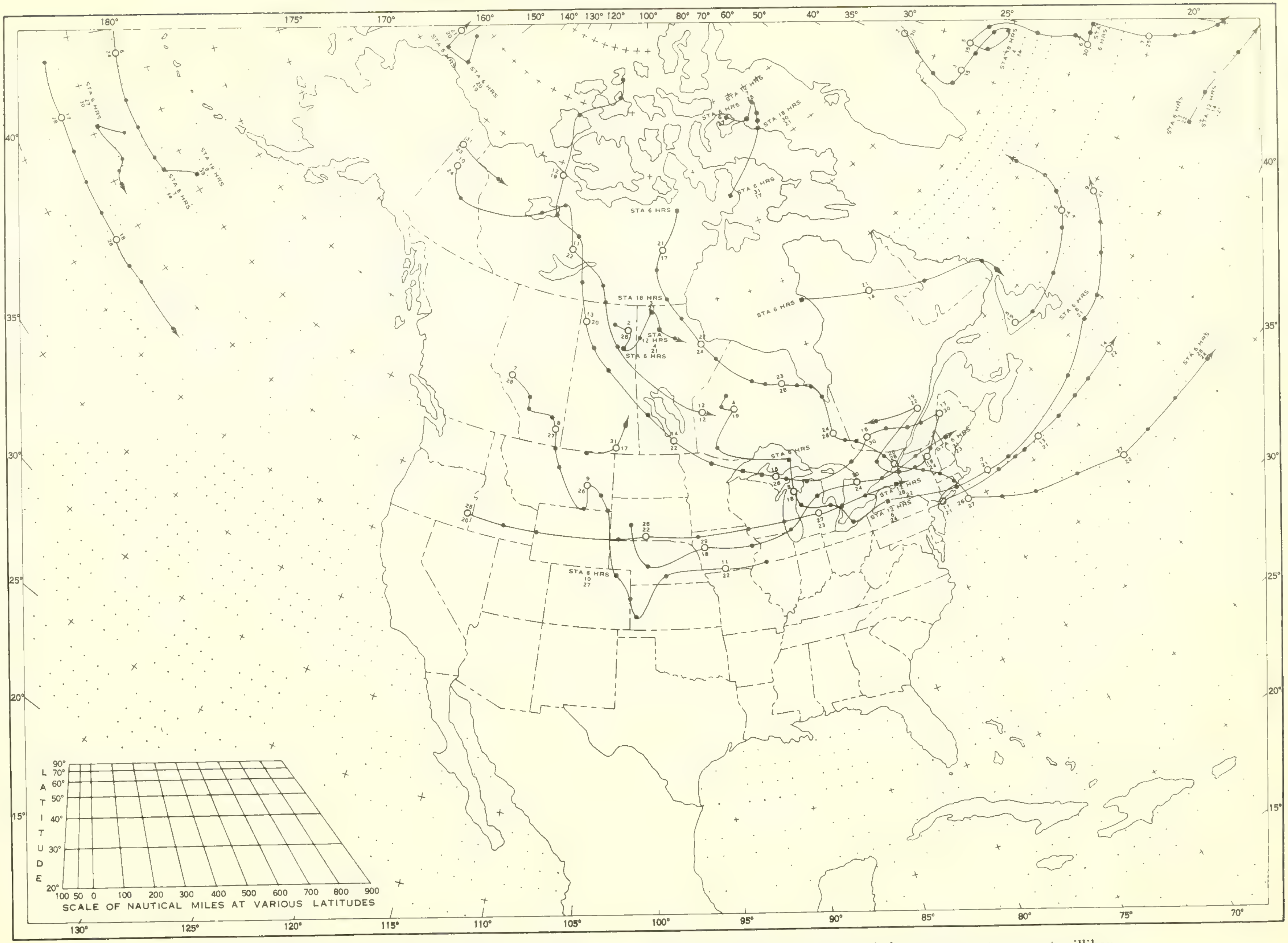
B. Percentage of Mean Daily Solar Radiation, August 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

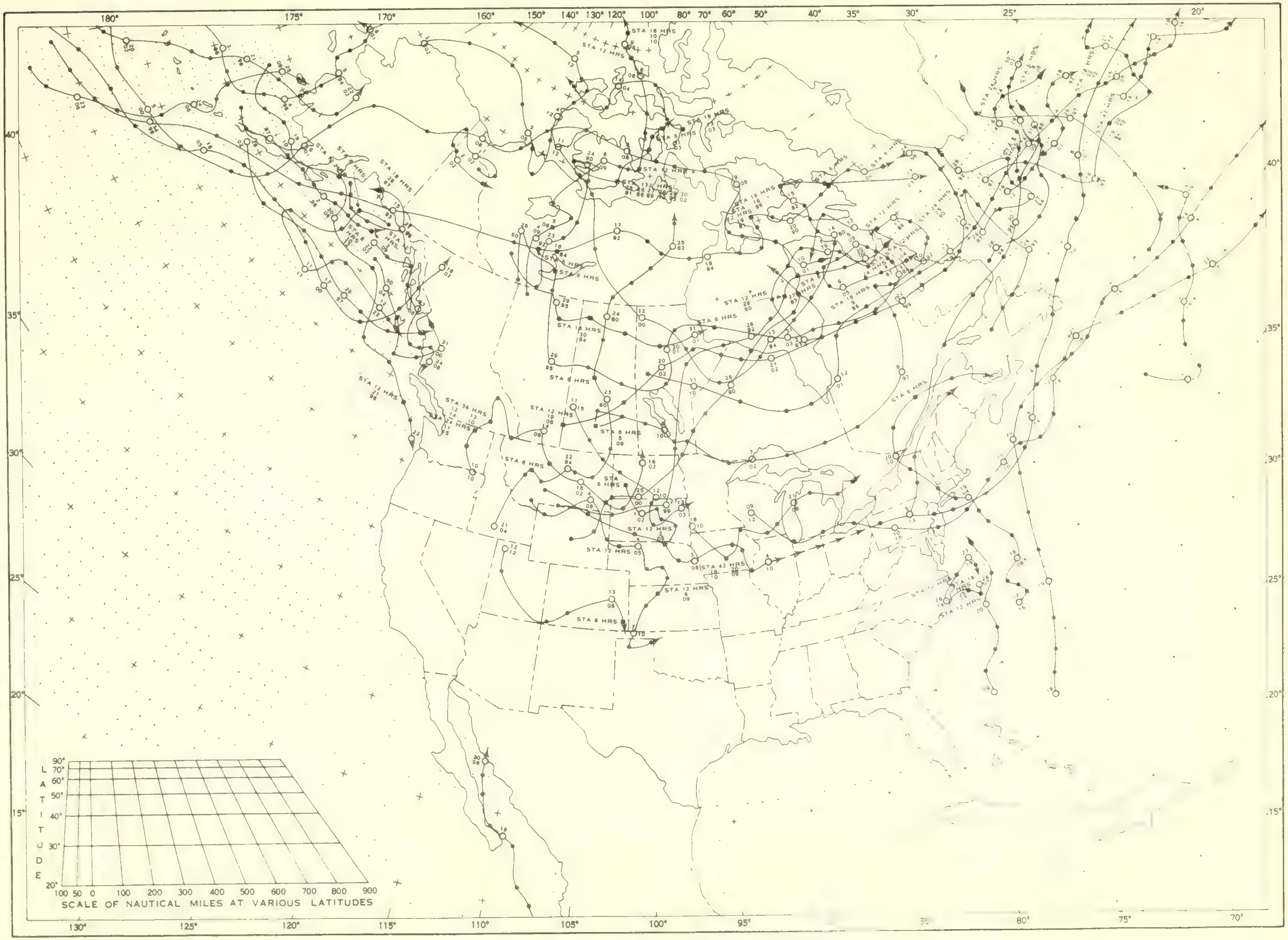
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, August 1960.



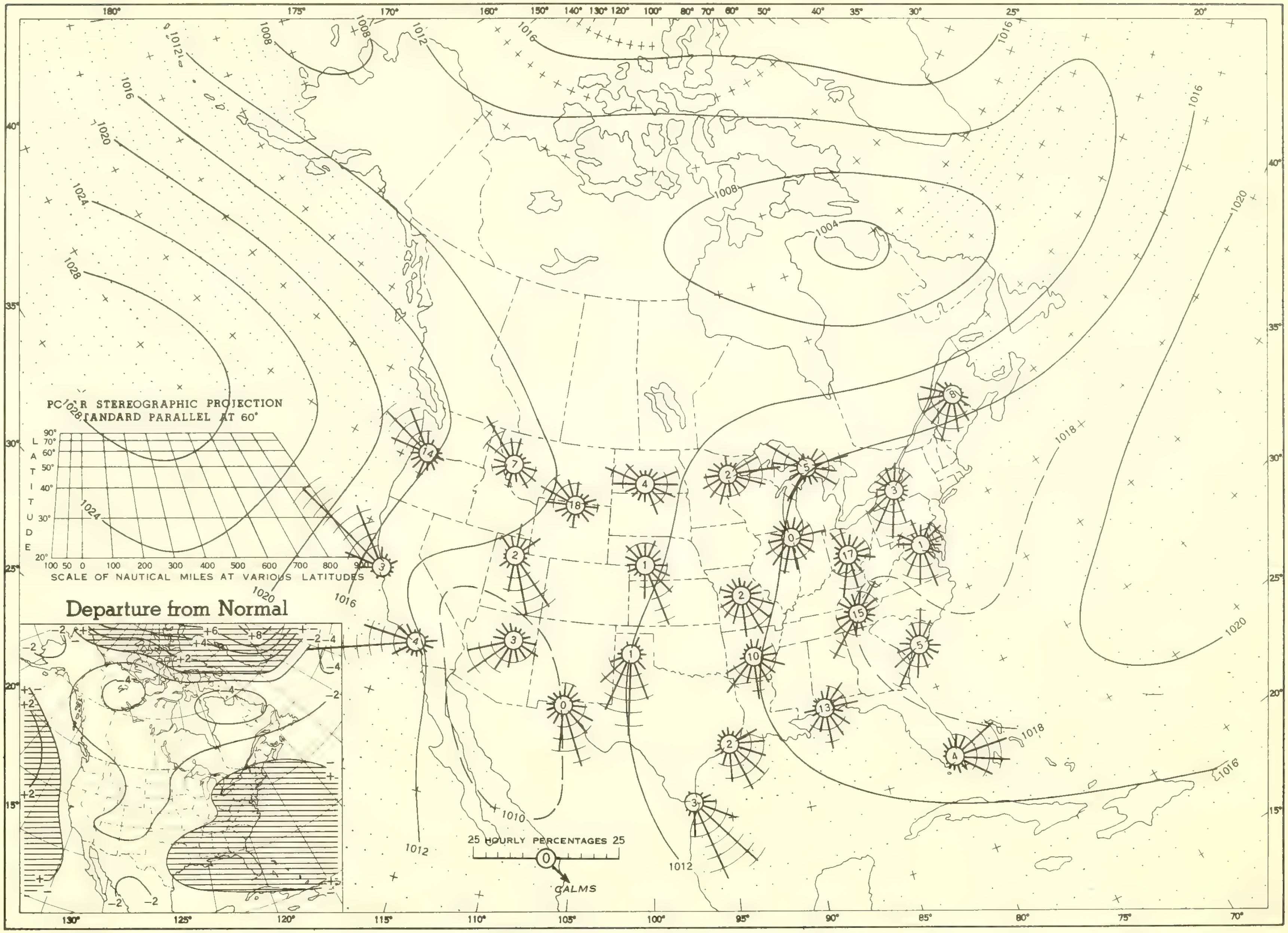
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, August 1960.



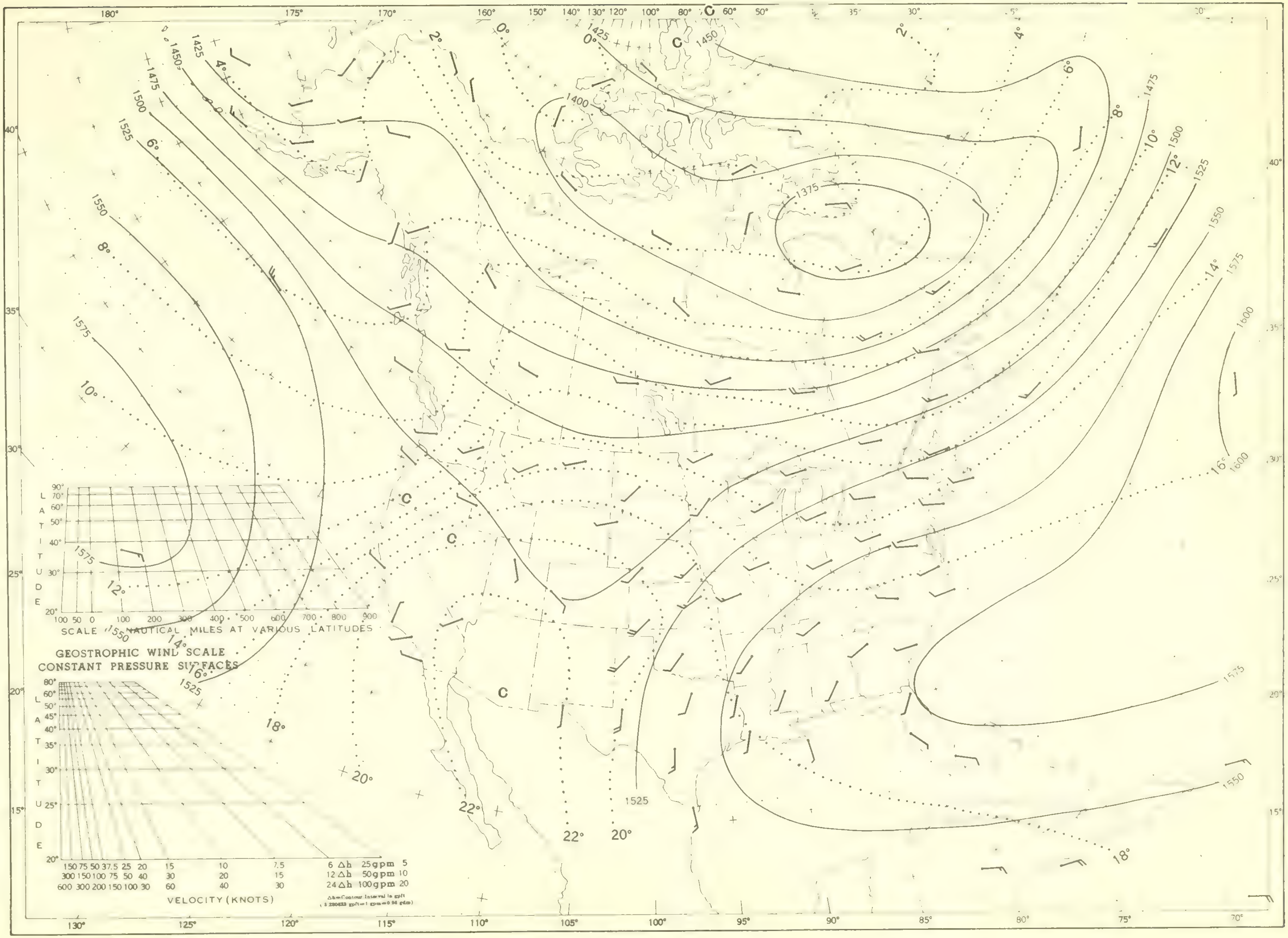
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, August 1960. Inset: Departure of Average Pressure (mb.) from Normal, August 1960.



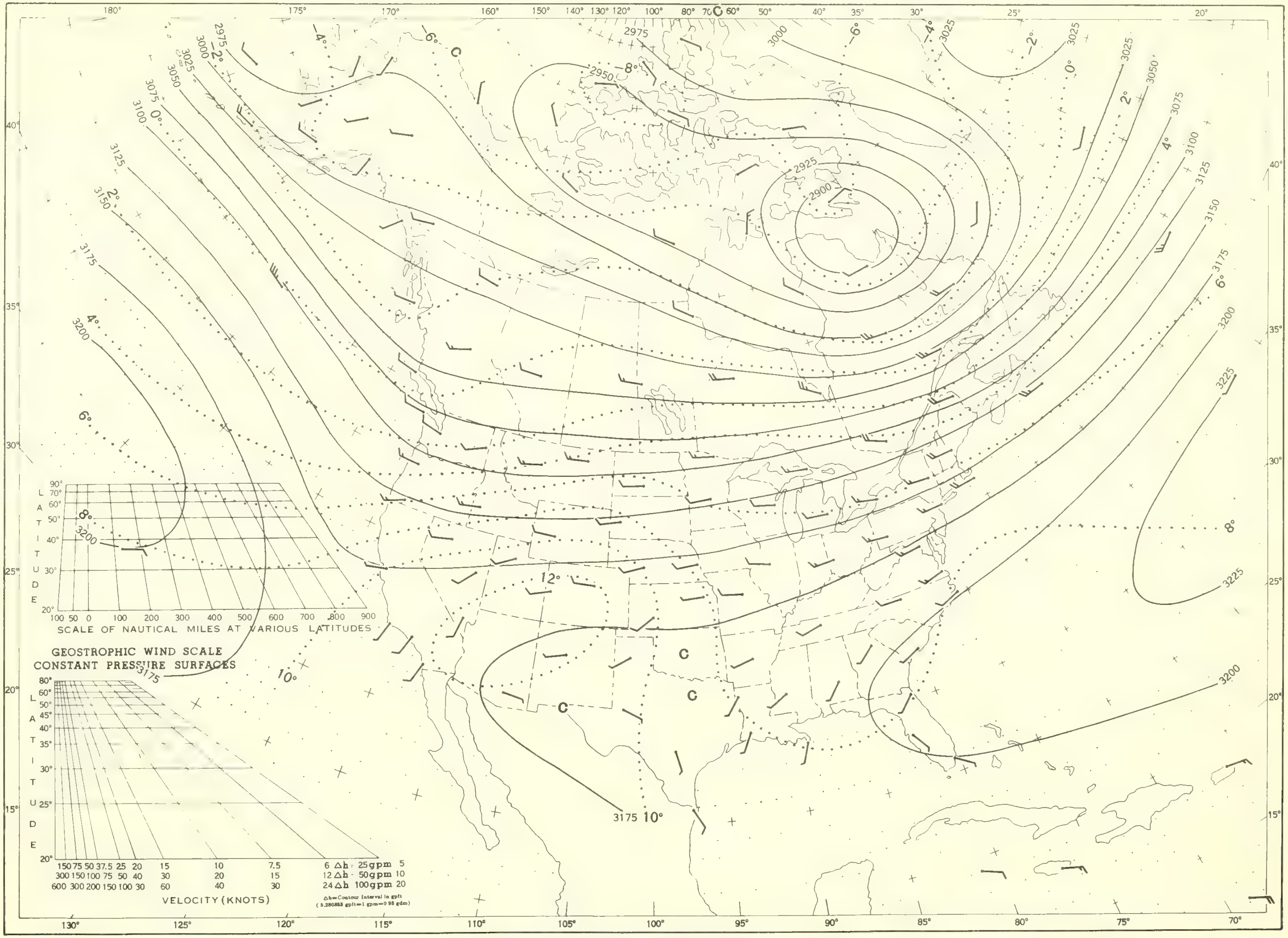
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, August 1960. Average Height and Temperature, and Resultant Winds.



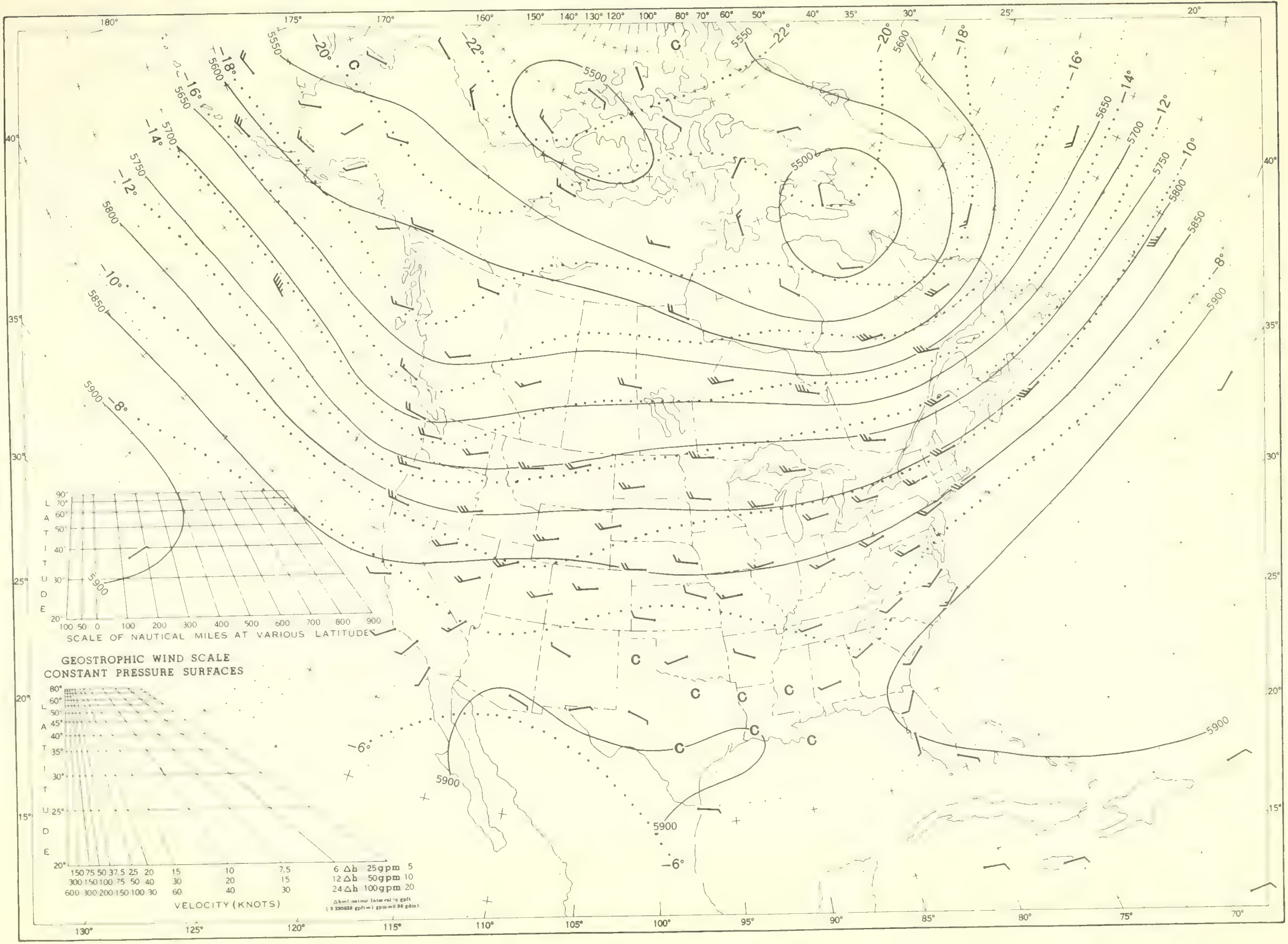
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, August 1960. Average Height and Temperature, and Resultant Winds.



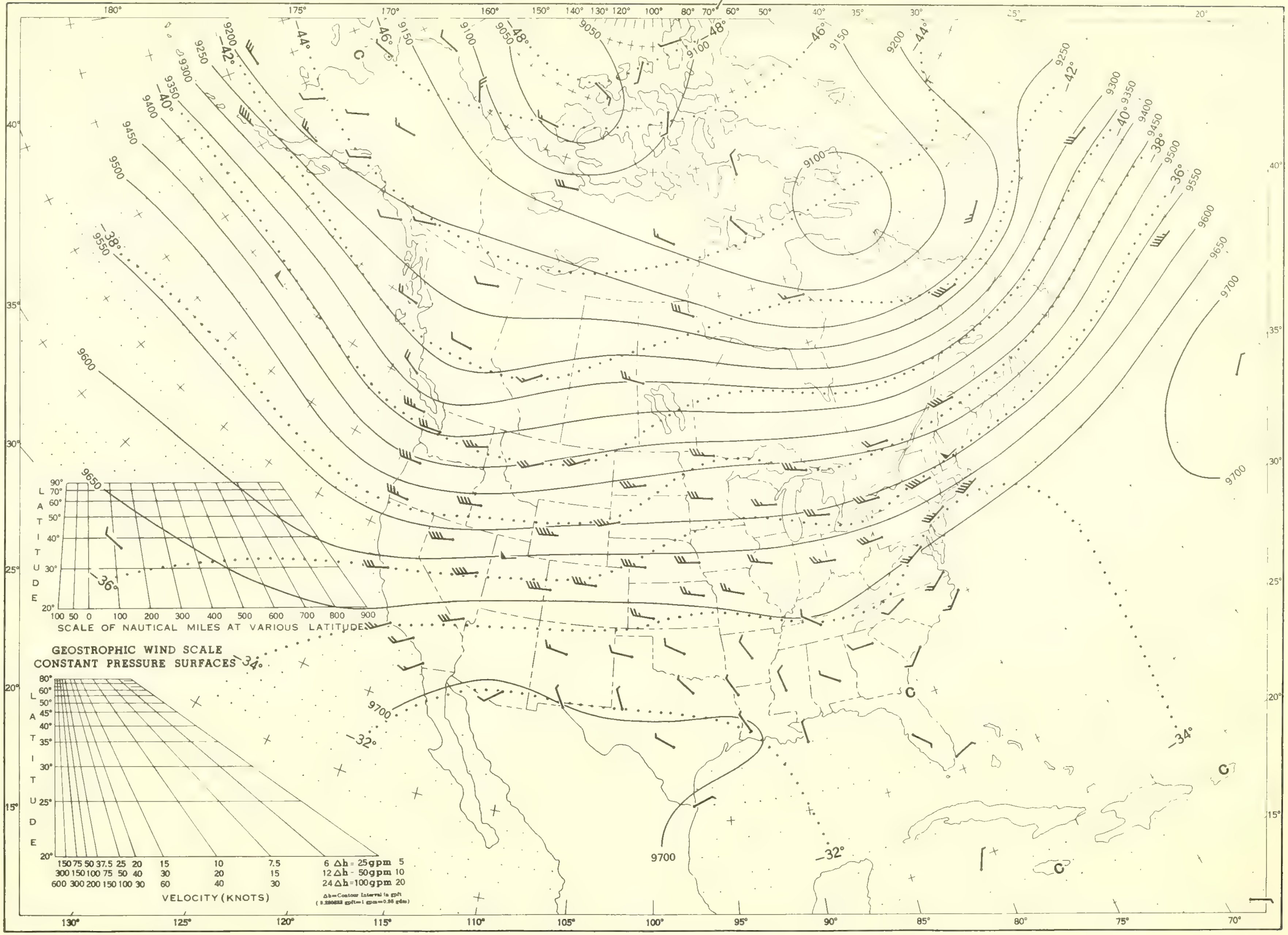
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, August 1960. Average Height and Temperature, and Resultant Winds.



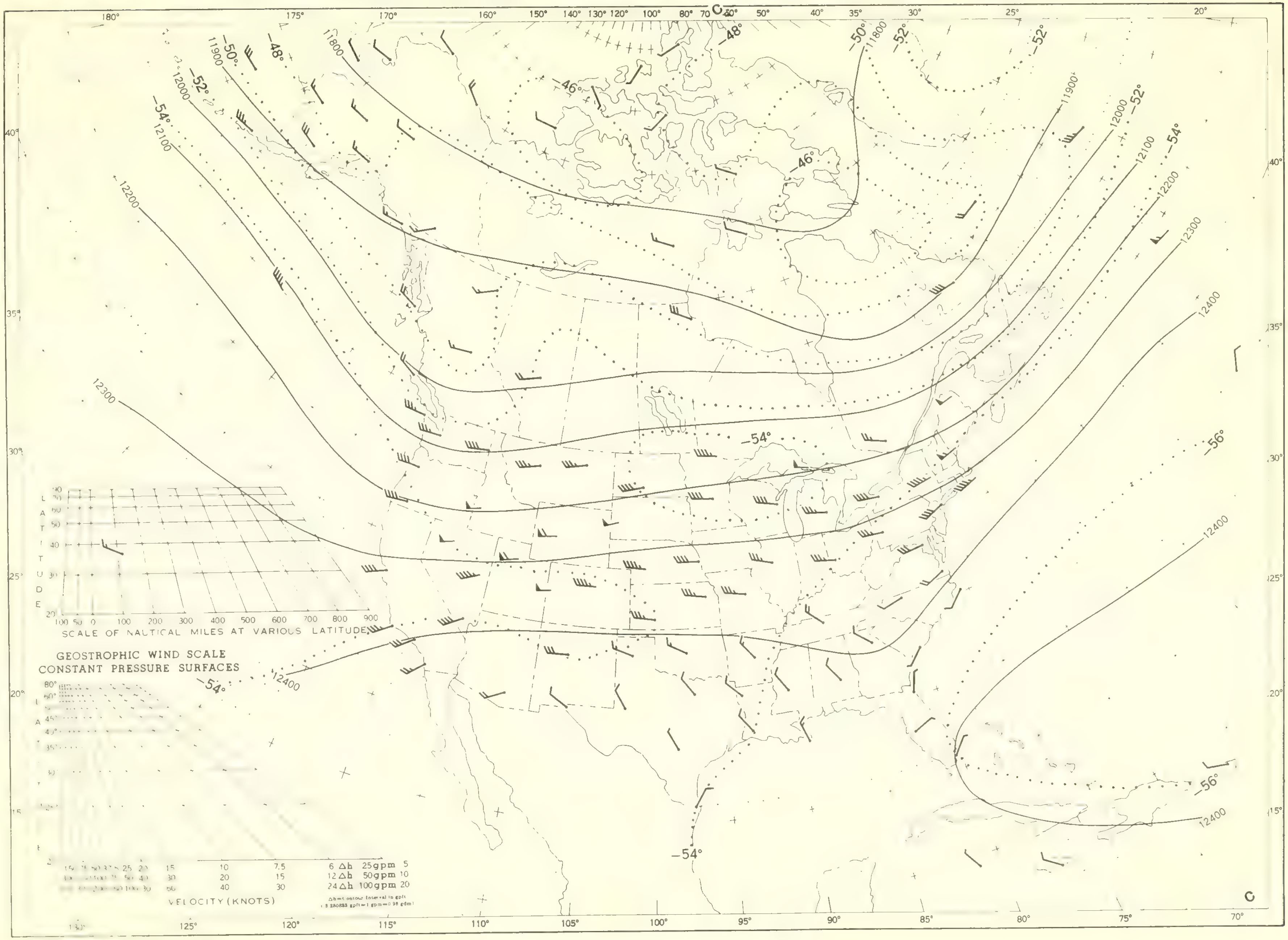
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, August 1960. Average Height and Temperature, and Resultant Winds.



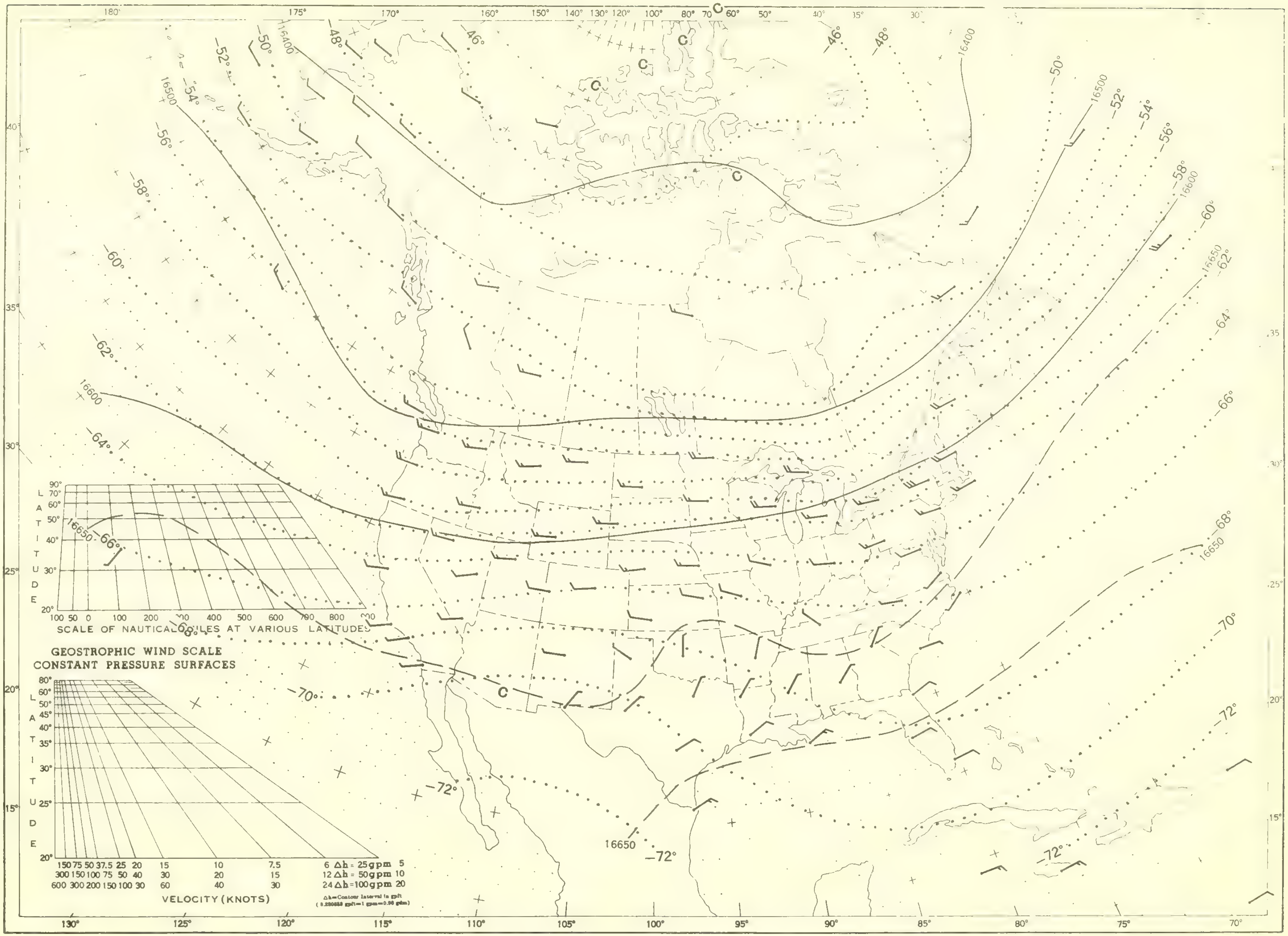
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, August 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, August 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

U. S. DEPARTMENT OF COMMERCE
FREDERICK H. MUELLER, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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ASHEVILLE: 1960

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 9

SEPTEMBER 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

September was abnormally warm, with the hottest weather of the year in the northeastern quarter of the Nation occurring during the first week. Precipitation, light in most of the country, was heavy in Wisconsin, the Texas Panhandle, south of the Ohio River, and along the Atlantic coast. Hurricane Donna produced heavy rainfall and caused heavy damage along the Atlantic coast on the 9th to the 13th, and hurricane Ethel produced heavy rainfall from the central Gulf area to Kentucky on the 14th to the 17th.

TEMPERATURE.--Temperatures for the month averaged from 2° to 4° above normal, except along the north Pacific coast and in a few sections along the Gulf coast where they were 2° below normal. Chicago, Ill., had its second warmest September in 89 years; Los Angeles, Calif., its warmest month of the year; and Brownsville, Tex., its coolest September since 1889.

From the upper Great Plains to the Atlantic coast the weather during the first week was the hottest of the year at many locations. Maximum temperatures were in the 90's and minima in the 60's and 70's along the Canadian Border. Maximum temperatures reached 100° or more at a number of stations in the Dakotas, and 106°, the highest temperature in Wyoming for September, was recorded at Spencer (near the South Dakota Border) on the 4th. On the 4th, 93° at Cheyenne, Wyo., was the highest ever recorded there so late in the season; on the same date 97° at Denver equaled the late season high there; and on the 14th Roswell, N. Mex., recorded a late season high of 102°.

After the first week temperatures generally ranged within normal limits, although in the northern Great Plains maxima soared into the 90's during a brief heat wave at the end of the third week. Frost or freezing had occurred in many northern areas and as far south as northwestern Kansas in the Great Plains by the end of the month.

PRECIPITATION.--Hurricane Donna produced over one-half of the precipitation along most of the Atlantic coast, except in Florida where Donna's rainfall was only about 30 percent of the monthly totals. Unusually heavy monthly totals in Florida ranged up to 29.50 inches at Perrine in the lower east coast area where from 8 to 12 inches of rain were produced by the remnants of tropical storm Florence during the fourth week. At Miami 24.40 inches was the greatest total there for September or any other month of record, yet only 8.67 inches fell during Donna's passage.

More than 50 percent of the monthly rainfall occurred in a wide area extending from the central Gulf area to the Ohio River during the passage of hurricane Ethel on the 14th to the 17th, when amounts ranged from 2 to over 6 inches. Monthly totals in this area ranged up to more than 13 inches near the coast.

Precipitation was less than 50 percent of normal in Montana and adjacent areas of nearby states. Only 0.04 inch at Glasgow, Mont., was the least there for September since 1943 and the second lowest amount on record, and 0.13 inch at Helena was the least there for September since 1932. Sheridan, Wyo., received only 0.27 inch which gave an accumulated total for the period January 1 to September 30 of 6.10 inches, or 7.78 inches below normal and the second driest such period on record. Eight stations in eastern Montana had no rain at all and the soil was too dry there for fall grains.

Northern Ohio, extreme northwestern Pennsylvania, and extreme western New York State were parts of a very dry area. Ravenna, Ohio, had only 0.01 inch; Churchhill, N. Y., only 0.09; and Akron, Ohio, had 0.20, the least for any month since the beginning of records in 1887. Rochester, N. Y., had 0.28 inch for the driest September there since 1830.

Southern Illinois, central and eastern Missouri, eastern Oklahoma, and much of Texas outside the Panhandle, constituted another extremely dry area. At Columbia, Mo., 0.30 inch was the least for September since the beginning of records in 1905. Only 0.01 inch fell at El Paso, Tex., and several stations in the State had no rain at all. Only 0.03 inch was recorded at Greenville, Ill., 0.10 inch at Ava Ranger Station, Mo., and 0.12 inch at Grand River Dam, Okla.

DESTRUCTIVE STORMS.--Hurricane Donna was by far the most destructive storm of the month leaving a trail of damage from Florida to Maine that totaled many millions of dollars. Hurricane Ethel caused some crop damage, but had lost hurricane intensity before entering the United States. Ethel was interesting owing to the fact that she was the first hurricane discovered by the Navy MAMOS (Marine Automatic Meteorological Observation Station), a new meteorological instrument system. A squall line which crossed the Great Lakes region on the 1st killed 5 persons and injured 20 in Lower Michigan.

At Tucson, Ariz., a 54 m.p.h. wind on the 30th set a new September record there for the fastest mile. At Havre, Mont., a 70 m.p.h. wind on the 4th was the strongest wind ever observed at that station.

CONDENSED CLIMATOLOGICAL SUMMARY

SEPTEMBER 1960

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	3 Stations	100	9+	2 Stations	45	14+	Brewton 3SSE	10.57	Primrose Farm	2.34
Arizona	2 Stations	114	13+	Maverick	21	23	Silver Bell	3.51	5 Stations	.00
Arkansas	4 Stations	102	6+	Gravette	37	13	Mount Magazine	8.33	Gravette	.05
California	Cow Creek	118	14+	Bridgeport	18	23	Julian Wynola	4.09	220 Stations	.00
Colorado	3 Stations	103	2+	Fraser	15	30+	Campo 11WSW	5.05	Saguache	.16
Connecticut	Hartford WB Airport	90	8	Coventry	28	17	Wolcott Reservoir	11.27	Natchaug Ranger Station	5.67
Delaware	3 Stations	90	9+	Georgetown 5SW	45	23	Dover	10.19	Selbyville	4.95
Florida	Avon Park	97	26	Niceville	55	13	Perrine	29.50	Madison	4.64
Georgia	Rome	100	6	Blairsville Exp Sta.	37	14	Folkston 3SSW	13.34	Swainsboro	1.18
Idaho	Ola 5S	98	12	Three Creek	15	22	Sandpoint Exp Sta.	1.77	3 Stations	.00
Illinois	4 Stations	101	7+	Marengo	37	14	Bloomington Wtrwks.	5.65	Greenville 1E	.03
Indiana	3 Stations	100	8+	Waterloo	30	14	Goshen College	4.55	Vincennes 1NW	T
Iowa	Columbus Junction	101	2	2 Stations	32	30	Red Oak	7.56	Keosauqua No. 2	.89
Kansas	Syracuse 2WNW	104	5+	Atwood	30	30	Diamond Springs	6.51	Mound Valley 3WSW	.27
Kentucky	Mayfield	103	7	West Liberty	41	14	Tyrone Lock 5	9.60	Hartford 6NW	.52
Louisiana	Rayne 6N	99	20	Many 4NNE	45	13+	Grand Isle LB Sta.	13.88	Lake Providence	.28
Maine	West Buxton 2NNW	96	8	Long Falls Dam	20	17	Sanford 2NNW	10.66	Fort Fairfield	1.85
Maryland	Baltimore WB City	94	1	Oakland 1SE	37	15	Millington	12.08	Boonsboro	1.87
Massachusetts	Lowell	96	9+	West Medway	29	17	Adams	9.76	Nantucket WB Airport	2.57
Michigan	4 Stations	98	8+	Vanderbilt Trout Sta.	25	16	Germfask Wildlife Ref.	5.97	Mount Clemens AF Base	.37
Minnesota	6 Stations	98	6+	Tamarack	22	29	Faribault	6.17	Caribou 2S	.50
Mississippi	Tupelo	101	6	2 Stations	48	14	Bay Saint Louis	11.08	Ofahoma	.31
Missouri	2 Stations	102	7+	Berryman 6NW	34	29+	Conception	5.18	Ava Ranger Station	.10
Montana	Mizpah 4NNW	106	4	Wisdom	11	22	Essex	2.31	8 Stations	.00
Nebraska	Alma	105	4	2 Stations	22	30	Plattsmouth	5.47	Hay Springs 12S	.00
Nevada	Mesquite	111	11+	Mountain City RS	12	23+	Lund	1.26	8 Stations	.00
New Hampshire	Conway 1N	98	8	Fabyan	27	6	MacDowell Dam	9.98	2 Stations	3.60
New Jersey	Burlington	93	1	Long Valley	37	15	Clayton	12.89	Atlantic City	3.50
New Mexico	Animas	107	14	Gascon	17	25+	Porter	5.71	2 Stations	.00
New York	Dansville	99	9	Canton State Univ	26	16	Riverhead Research	10.63	Churchville	.09
North Carolina	7 Stations	95	6+	Celo 2S	33	14	Plymouth 5E	11.47	Poplar	1.22
North Dakota	2 Stations	104	5+	Medora 3NNE	16	30	Grand Forks University	1.84	2 Stations	.00
Ohio	do	98	9+	Millport 2NW	33	14	Ashtabula	6.26	Ravenna 2S	.10
Oklahoma	Hollis	103	14	2 Stations	41	13	Hugo	8.55	Grand River Dam	.12
Oregon	2 Stations	99	8+	Seneca	12	22	Headworks Portland WR	2.73	3 Stations	.00
Pennsylvania	3 Stations	93	1	Coudersport 3NW	32	14	Honey Brook 1W	10.61	Farrell Sharon	.28
Puerto Rico	2 Stations	97	27+	Guineo Reservoir	56	26	Rio Blanco Upper	36.19	Mona Island	2.09
Rhode Island	Providence WBAP	88	8	Kingston	30	17	Block Island WBAP	11.36	Providence WBAP	5.98
South Carolina	3 Stations	96	6+	Parr	44	14	Georgetown Marine Docks	12.79	Fort Mill 4NW	1.19
South Dakota	5 Stations	107	4+	2 Stations	17	30	Centerville	4.65	Angostura Dam	.10
Tennessee	Paris	104	8	Mountain City 2	35	14	Cagle	13.52	Odomville	.31
Texas	2 Stations	108	20+	Alpine	41	26	Longview	11.16	Several Stations	.00
Utah	do	101	13+	Strawberry Res	21	28	Moon Lake	3.02	Garrison	.10
Vermont	Saint Johnsbury	93	9+	West Burke	26	17	Readsboro 1SSE	9.47	Gilman	3.20
Virginia	2 Stations	95	6+	Chilhowie 1S	33	14	Dahlgren Weapons Lab.	13.66	St. Paul	.80
Washington	Trinidad 2SSE	98	13	Mt. Spokane Summit	20	22+	Ranier Paradise RS	4.62	Upper Pine Creek	T
West Virginia	2 Stations	95	8+	Canaan Valley	28	27	Webster Springs	8.37	New Cumberland Dam 9	.58
Wisconsin	Lake Geneva	98	6	Gordon 2ESE	23	30	Waupaca	7.20	Beloit	1.61
Wyoming	Spencer 10NE	106	4	Lamar RS	15	24	Thermopolis 24WNW	2.04	2 Stations	T

+ And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

SEPTEMBER 1960

State and station		Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
	Elevation (ground)	Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb.	°F.	°F	°F.	°F	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M p. h.		M p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	991.2	1016.4	84	65	74.4	-0.4	95	6+	55	14	9	0	66	79	2.73	0.02	1.73	7	2	0.0	0	6.5	ENE	33	NE	1	15	4	11	5.1	63
Huntsville	605	993.6	1016.6	85	64	74.5	---	99	7+	52	14	9	0	64	76	4.50	---	2.13	8	[illegible]	.0	0	5.7	ESE	*22	E	16	14	5	11	5.0	-
Mobile	211	1012.1	1014.6	86	68	77.1	-.6	93	7+	61	13	11	0	68	78	3.87	-1.91	3.11	9	3	.0	0	9.1	N	*36	ESE	15	14	8	8	4.8	--
Montgomery	195	1007.2	1015.3	87	69	78.1	1.0	95	6	59	14	13	0	67	74	6.44	2.93	2.07	10	3	.0	0	8.2	NE	27	S	16	14	6	10	5.1	64
ALASKA																																
Anchorage	90	1004.4	1009.2	53	42	47.1	-.9	61	12	31	26	0	1	40	79	4.79	2.08	1.20	15	0	T	0	7.9	NNE	*23	SSE	22	1	4	25	8.8	30
Annette	110	1014.6	1018.7	58	47	52.7	-.4	74	11	39	19	1	0	48	86	10.37	.77	2.32	13	0	.0	0	8.4	SE	*35	SSE	21	4	4	22	8.1	--
Barrow	22	1014.2	1014.9	28	22	24.6	-6.0	36	26	10	19	0	30	23	91	.52	-.03	.20	13	0	5.0	5	13.0	NE	*31	W	28	0	0	30	9.7	--
Barter Island	39	1011.9	1013.6	32	27	29.5	-1.8	41	27	17	29	0	30	29	96	.75	-.16	.21	20	0	6.0	2	13.7	ENE	*39	WSW	18	0	2	28	9.6	--
Bethel	125	1006.8	1008.2	50	35	42.4	-2.9	58	16	25	24+	0	11	39	87	3.58	.57	.93	15	1	T	[illegible]	13.7	NNW	*55	S	26	2	4	24	8.5	--
Cold Bay	90	1005.8	1009.4	52	42	47.2	-.3	70	1	34	29+	1	0	43	85	2.92	-.65	.65	25	0	.0	0	15.0	SSE	*39	ESE	14	0	2	28	9.1	--
Cordova	40	1009.5	1010.8	53	42	47.4	-.6	65	4	32	18+	0	2	44	86	19.40	3.93	5.09	27	0	.0	0	6.0	ENE	*21	E	21+	0	2	28	9.5	--
Fairbanks	436	992.9	1010.0	49	34	41.4	-3.2	64	10	20	19	0	15	36	84	3.05	1.84	1.15	13	0	T	T	6.2	NNE	*17	SW	27	2	7	21	8.3	--
Juneau	17	1014.6	1015.5	59	44	49.2	.2	67	12+	34	15	0	0	46	90	8.47	1.55	2.45	25	0	.0	0	10.1	ESE	*39	ESE	2	0	2	28	9.4	--
King Salmon	44	1006.1	1008.3	53	39	46.2	-1.4	60	17+	25	26	0	6	41	83	3.68	.31	1.69	19	0	T	[illegible]	11.4	E	*36	S	27	2	4	24	8.4	--
Kotzebue	10	1009.8	1010.3	43	32	37.6	-3.3	55	1	23	24	0	16	32	81	2.85	1.91	.94	13	0	5.4	1	11.1	N	*40	SSE	26	6	8	16	6.8	-
McGrath	334	996.6	1009.3	48	34	40.7	-3.3	55	12+	20	26+	0	11	35	82	4.81	2.40	1.09	16	0	.7	1	6.4	NNW	*35	S	27+	3	3	24	8.4	--
Nome	13	1009.1	1009.4	45	32	38.4	-3.6	57	1	20	24	0	19	31	75	2.76	-.17	1.26	10	0	T	T	10.6	N	*37	SSE	29	6	8	16	6.8	29
Shemya	122	1009.8	1015.0	52	45	48.7	----	55	17+	38	24	0	0	45	86	3.71	----	1.35	15	0	.0	0	17.5	WSW	*44	S	28	3	5	22	8.1	--
St. Paul Island	22	1009.1	1010.2	48	39	43.6	-1.7	51	1	30	23	0	4	41	89	2.06	-1.43	.45	14	0	.0	0	----	---	--	---	--	1	6	23	8.7	--
Yakutat	28	1012.9	1013.8	54	43	48.4	.0	62	1	34	15+	0	0	46	89	23.66	7.34	6.38	25	0	.0	0	7.2	ENE	*39	SE	2	0	2	28	9.5	--
ARIZONA																																
Flagstaff	6993	------	------	76	44	59.7	2.7	81	11+	32	30+	0	2	--	--	1.18	-.67	.38	6	9	.0	0	----	---	--	---	-	13	14	3	3.7	--
Phoenix	1109	971.6	1009.9	99	73	85.9	3.2	104	12+	57	23	30	0	54	37	.12	-.88	.11	2	2	.0	0	6.6	E	*32	SE	1	27	2	1	1.1	96
Prescott	5014	849.3	1013.4	86	56	70.9	2.7	93	13+	44	23	5	0	43	42	.64	-1.52	.30	2	8	.0	0	9.4	SSW	36	S	1	21	8	1	2.7	86
Tucson	2584	924.5	1010.7	95	67	81.2	1.1	100	3+	58	24+	29	0	49	38	1.20	-.28	.61	4	5	.0	0	8.5	SE	54	SE	30	21	9	0	2.1	89
Winslow	4880	853.7	1012.5	89	55	71.8	3.2	96	12	42	24	15	0	40	37	.44	-.68	.11	6	4	.0	0	9.5	SW	*32	WSW	1	20	8	2	3.1	--
Yuma	199	1004.1	1009.2	105	75	89.8	1.5	114	12	61	23	29	0	55	37	.42	-.22	.39	2	4	.0	0	7.4	SSE	34	S	10	24	5	1	1.7	92
ARKANSAS																																
Fort Smith	458	999.7	1016.1	90	64	77.0	2.0	98	6+	46	13	19	0	66	74	1.67	-2.04	.70	6	4	.0	0	5.1	ENE	25	W	21	18	6	6	3.5	72
Little Rock	257	1003.7	1016.4	88	64	76.3	1.5	100	5	54	29+	13	0	65	75	6.23	3.38	3.65	8	6	.0	0	6.4	ENE	27	SE	23	17	6	7	3.8	72
Texarkana	361	------	1016.0	89	66	77.4	.2	96	5	53	13	17	0	--	--	4.24	1.45	2.69	8	8	.0	0	4.4	NE	--	---	--	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	994.6	1012.3	92	63	77.9	2.3	102	26	56	30+	19	0	48	38	T	-.07	T	0	0	.0	0	5.5	NW	*22	NNW	21	24	6	0	1.4	--
Bishop	4108	874.0	1012.5	91	50	70.5	3.2	98	13	38	23	23	0	--	--	.05	-.14	.05	2	2	.0	0	----	---	--	---	--	21	7	2	2.7	--
Blue Canyon	5280	840.8	1012.2	77	56	66.5	3.0	84	26	45	4+	0	0	--	--	.03	-.53	.03	1	1	.0	0	7.1	SSW	25	ESE	9	23	4	3	2.0	--
Burbank	699	986.5	1012.8	89	62	75.6	4.4	101	12	55	23	17	0	54	54	T	-.29	T	0	0	.0	0	5.8	SSE	*16	ESE	19+	22	8	0	1.9	--
Eureka (U)	43	1014.2	1016.6	58	49	53.6	-2.6	64	9	44	22	0	0	--	--	.01	-.66	.01	1	0	.0	0	5.1	⊕ N	34	N	21	4	9	17	7.2	37
Fresno	331	1000.0	1011.7	92	58	75.2	1.7	100	11	50	22	21	0	48	44	.02	-.03	.02	1	1	.0	0	6.3	WNW	21	NW	3	23	6	1	1.6	97
Long Beach	34	1011.9	1013.2	87	63	74.8	---	100	12	55	28	10	0	59	64	.02	----	.02	1	0	.0	0	6.3	WNW	*23	WNW	4	16	14	0	3.0	--
Los Angeles (U)	312	------	------	86	65	75.6	4.6	99	12	60	7	10	0	60	66	T	-.27	T	0	0	.0	0	4.9	⊕ W	18	W	4	20	10	0	2.2	87
Los Angeles	99	1009.1	1013.0	77	63	70.0	3.3	92	13	58	28	1	0	62	77	T	-.21	T	0	0	.0	0	7.2	WSW	*15	WSW	10+	14	15	1	3.0	--
Mt. Shasta (R)	3544	893.0	1015.2	83	46	64.4	4.6	90	25+	35	22	2	0	--	--	.13	-.63	.13	2	2	.0	0	---	---	--	---	--	26	2	2	1.4	--
Oakland	3	1013.9	1014.3	73	54	63.4	.1	93	25	48	23	2	0	52	72	T	-.09	T	0	0	.0	0	9.2	WNW	*21	WNW	29+	12	16	2	4.0	--
Point Arguello	367	1000.0	1013.3	66	52	58.6	---	73	24+	43	22	0	0	--	--	.02	----	.01	2	0	.0	0	5.8	---	*21	NW	3	7	11	12	5.9	--
Red Bluff	341	999.7	1012.2	93	60	76.5	1.5	102	8	53	15	22	0	39	31	.05	-.28	.03	2	3	.0	0	9.2	S	34	SE	3	26	3	1	1.2	95
Sacramento	17	1011.2	1012.4	90	55	72.4	2.1	103	11	46	21	18	0	49	53	T	-.06	T	0	1	.0	0	6.2	SSW	26	W	3	27	2	1	1.1	95
Sandberg (R)	4517	863.5	1011.9	84	63	73.1	3.7	92	13+	48	21	7	0	--	--	.00	-.23	.00	0	0	.0	0	10.8	SSW	*29	SSE	14	27	2	1	1.1	--
San Diego	19	1008.8	1012.2	80	65	72.3	3.6	90	12	58	25	1	0	62	73	.06	-.11	.06	1	2	.0	0	6.1	NW	17	NW	3	20	10	0	2.3	84
San Francisco(U)	52	------	------	67	53	59.8	-1.8	89	25	49	19+	0	0	--	--	T	-.13	T	0	0	.0	0	8.9	⊕ W	25	W	5+	--	--	--	----	66
San Francisco	8	1013.5	1014.5	72	53	62.5	.5	91	25	48	23+	1	0	52	75	T	-.11	T	0	0	.0	0	10.9	WNW	30	WNW	10	17	12	1	3.1	--
Santa Maria	238	1005.4	1014.2	73	51	61.9	-.2	85	24	43	22	0	0	52	78	T	-.12	T	0	0	.0	0	5.4	WNW	*25	WNW	4	14	15	1	3.5	--
COLORADO																																
Alamosa	7536	776.5	1019.3	75	37	56.4	1.7	87	3	26	29+	0	9	--	--	.26	-.43	.08	8	4	.0	0	----	---	--	---	--	11	13	6	4.4	--
Colorado Springs	6173	815.1	1017.3	78	48	63.4	1.4	94	2	38	25+	6	0	39	47	.61	-.46	.22	9	7	.0	0	9.4	NNE	*32	NNW	20	13	11	6	4.3	--
Denver	5292	841.2	1016.7	81	49	65.0	2.3	97	4	36	24	6	0	37	43	.38	-.70	.18	5	5	.0	0	7.8	SSW	35	W	27	16	8	6	3.9	79
Grand Junction	4849	861.2	1015.0	83	56	69.2	1.9	94	4	44	24+	3	0	37	35	.65	-.37	.30	8	9	.0	0	10.3	ESE	40	SE	22	20	6	4	3.1	90
Pueblo	4639	859.5	1016.2	83	52	67.1	2.3	98	1	41	25	7	0	44	51	1.21	.46	.62	6	4	.0	0	7.1	SE	47	N	11	14	12	4	4.0	78
CONNECTICUT																																
Bridgeport	7	1018.7	1019.5	72	57	64.9	-.3	86	8+	49	17	0	0	55	74	7.42	3.87	4.67	10	0	.0	0	9.5	NE	48	NW	12	8	10	12	6.0	--
Hartford	169	1012.6	1018.6	73	51	62.0	-1.8	90	8	38	17	1	0	55	81	8.37	4.93	5.28	9	2	.0	0	6.5	N	43	NE	12	8	11	11	5.9	56
New Haven	6	1018.5	------	71	55	62.9	-.7	82	9+	45	26+	0	0	--	--	7.73	4.27	5.26	11	1	.0	0	7.1	---	35	E	12	8	9	13	6.1	61
DELAWARE																																
Wilmington	78	1015.5	1018.9	77	59	68.0	0.0	87	1	48	14	0	0	60	80	9.53	5.73	5.62	10	3	.0	0	7.2	ENE	37	N	12	6	11	13	6.1	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	80	62	71.1	1.2	91	1	50	27	2	0	--	--	4.99	.63	3.09	9	--	.0	0	----	---	--	---	--	--	--	--	----	--
Wash. Nat'l. AP	14	1014.0	1018.5	79	63	71.3	1.7	92	1	51	27	2	0	62	75	4.17	.05	2.83	8	4	.0	0	9.0	ENE	35	S	11	6	12	12	6.1	61
FLORIDA																																
Apalachicola (U)	13	1011.6	------	85	72	78.8	-.1	89	21+	67	13	0	0	--	--	12.60	4.95	6.32	13	9	.0	0	8.3	---	40	SE	15	10	12	8	5.2	73
Daytona Beach	31	1012.7	1014.7	85	73	79.1	-.3	88	30+	66	14	0	0	73	86	10.96	4.44	4.49	21	9	.0	0	10.8	ENE	*58	ESE	11	0	9	21	7.8	--
Fort Myers	15	1011.8	------	89	75	81.6	.3	93	14	71	10+	14	0	--	--	11.93	3.34	4.63	22	15	.0	0	9.1	---	*92	NE	10	2	12	16	7.1	--
Jacksonville	24	1013.6	1015.1	87	72	79.7	.5	90	30+	67	14	3	0	72	82	8.57	1.61	4.62	13	3	.0	0	9.9	ENE	46	NE	11	5	10	15	7.1	34
Key West	5	1011.1	1012.5	88	78	82.7	.0	92	13	70	8	8	0	74	78	9.12	3.07	1.95	16	10	.0	0	12.2	SSW	65	NW	10	1	17	12	7.0	54
Lakeland (U)	214	------	------	86	73	79.6	-.5	91	15	70	10	3	0	--	--	10.25	3.88	6.34	20	15	.0	0	8.3	---	--	---	--	3	15	12	6.9	42
Miami	7	1011.3	1012.6	87	76	81.7	.0	91	25+	73	22+	9	0	74	82	24.40	16.07	7.58	22	16	.0	0	9.2	ESE	63	E	10	1	14	15	7.4	--
Miami Beach	9	------	------	86	77	81.7	-.2	91	12	72	30+	2	0	--	--	16.02	10.17	8.35	22	--	.0	0	----	---	¢55	E	10	¢1	¢13	¢16	¢7.4	¢48
Orlando	106	1009.6	1013.9	88	72	80.3	-.4	93	27	68	14	11	0	73	85	11.21	4.06	4.39	20	9	.0	0	9.4	ENE	*46	ESE	11	2	13	15	7.4	--
Pensacola (U)	13	------	------	86	71	78.5	.2	93	11	65	30+	7	0	--	--	10.60	4.82	4.83	11	4	.0	0	†10.2	---	32	SE	7	--	--	--	----	63
Tallahassee	64	1011.7	1014.4	86	70	78.0	.0	91	20	60	13	6	0	70	81	9.83	4.47	3.96	14	9	.0	0	6.2	NE	*25	NE	4	7	10	13	6.5	--
Tampa	19	1011.9	1013.5	89	74	81.7	1.2	95	21+	71	4	13	0	73	80	8.17	1.72	3.56	17	13	.0	0	11.4	ENE	*56	NNW	10	1	19	10	7.0	50
West Palm Beach	15	1011.8	1013.0	87	74	80.8	-.4	93	25+	71	18	8	0	74	84	24.86	15.74	8.71	25	13	.0	0	10.4	ENE	*46	ESE	10	0	11	19	8.1	--
GEORGIA																																
Athens	798	988.8	1017.9	83	63	72.9	-2.3	95	6	53	14	6	0	65	81	6.09	3.03	2.33	9	4	.0	0	7.2	NE	*29	NE	16	11	8	11	5.5	--
Atlanta	975	975.7	1016.7	82	66	74.0	-.4	93	6	58	14	2	0	65	78	4.84	1.88	2.00	10	4	.0	0	10.2	ENE	*27	SE	16	10	8	12	5.6	60
Augusta	143	1009.5	1016.2	86	66	76.2	.4	95	6	57	14+	11	0	67	79	2.01	-1.20	.65	7	3	.0	0	5.5	ENE	*17	E	25+	8	10	12	6.4	--
Columbus	385	1001.6	------	87	67	77.0	.8	95	6	56	14+	15	0	--	--	2.83	.47	1.11	8	4	.0	0	8.4	---	*27	ENE	25	12	8	10	5.4	--
Macon	356	1002.3	1016.0	88	68	77.8	.3	96	6	59	14+	13	0	66	74	5.21	2.29	2.44	14	5	.0	0	8.0	NE	29	NE	8	9	10	11	5.8	61
Rome	637	993.9	------	84	61	72.7	-1.5	97	6	46	14	10	0	62	75	5.51	2.53	4.03	7	3	.0	0	4.5	---	--	---	--	12	8	10	5.1	--
Savannah	48	1013.5	1016.1	85	68	76.4	-.3	90	20+	60	13	2	0	70	85	5.84	-.66	2.64	13	6	.0	0	8.8	NE	40	N	11	7	11	12	6.4	59
Thomasville	283	------	------	88	69	78.5	.6	95	20+	61	13	13	0	--	--	9.05	4.10	3.56	8	6	.0	0	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table

		Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
State and station	Elevation of ground	Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F	°F.	°F		°F				°F	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
HAWAII																																
Hilo	31	1013.5	1014.8	83	68	75.7	0.4	88	27	64	3	0	0	68	79	12.00	1.58	6.02	26	1	0.0	0	9.4	WSW	*38	SE	27	4	8	18	7.3	32
Honolulu	7	1014.6	1015.1	86	74	79.8	.6	89	29+	70	23	0	0	68	67	.81	-.33	.46	10	0	.0	0	12.6	ENE	33	NE	1	7	13	10	5.8	80
Lihue	115	1010.2	1015.2	85	73	79.0	1.2	88	29	68	3	0	0	69	74	4.58	2.38	1.98	21	1	.0	0	13.0	NE	27	E	23	7	10	13	6.2	62
IDAHO																																
Boise	2842	920.4	1015.6	82	50	66.0	3.6	94	3	36	22	4	0	40	41	.29	-.17	.23	4	3	.0	0	7.0	SE	50	SE	3	23	6	1	2.1	94
Idaho Falls 46W (R)	4933	851.0	1017.3	78	40	58.9	2.9	85	12	29	9	0	4	--	--	.29	-.07	.21	4	2	.0	0	6.7	NE	@25	N	16+	--	--	--	---	--
Idaho Falls 42NW (R)	4790	------	------	79	38	58.4	3.0	86	19	22	9	0	7	--	--	.09	-.50	.09	1	--	---	--	6.1	NE	@21	SW	6	--	--	--	---	--
Lewiston	1413	965.8	1016.9	80	48	64.0	.8	91	12	38	22+	1	0	--	--	.69	-.27	.48	3	2	.0	0	----	---	--	---	--	16	6	8	3.8	--
Pocatello	4444	864.9	1016.6	79	46	62.7	2.9	88	12+	34	9	0	0	36	40	.16	-.74	.14	2	4	.0	0	9.2	SW	29	SE	1	17	10	3	3.1	87
ILLINOIS																																
Cairo (U)	314	1003.7	------	85	66	75.5	2.5	98	6	55	30+	8	0	--	--	3.81	.49	1.70	7	4	.0	0	5.9	Φ N	18	N	11+	18	6	6	3.6	79
Chicago (O'Hare)	656	993.2	1017.7	77	60	68.4	----	99	7	45	30	6	0	59	75	1.39	----	.65	8	3	.0	0	9.9	NNW	*32	SSW	24	7	11	12	6.2	--
Chicago (Midway)	610	994.9	1017.7	79	62	70.6	5.0	100	7	48	30	7	0	59	71	1.40	-1.83	1.04	8	3	.0	0	8.7	NW	26	S	24+	8	9	13	6.3	48
Moline	589	994.9	1017.0	79	58	68.6	3.2	98	6	44	28	8	0	59	74	3.42	-.67	1.50	8	6	.0	0	5.8	ESE	31	W	18	13	7	10	5.3	69
Peoria	654	995.6	1017.9	78	59	68.3	2.0	91	7	47	30+	8	0	59	76	2.82	-.91	1.43	4	4	.0	0	6.7	N	29	NW	24	12	6	12	5.2	65
Rockford	728	990.9	1018.0	76	57	66.4	2.8	95	7	43	30+	7	0	57	76	4.56	.43	2.53	9	5	.0	0	8.2	S	*32	SW	24+	9	8	13	5.7	--
Springfield	589	993.9	1017.1	85	61	72.7	5.8	99	6	47	30	11	0	59	69	1.64	-2.26	.75	7	5	.0	0	7.5	NNE	52	SW	8	11	8	11	5.1	75
INDIANA																																
Evansville	383	1001.0	1016.9	85	61	72.9	2.4	98	8+	50	13	8	0	61	72	1.43	-1.97	1.07	4	2	.0	0	6.1	NW	24	E	2	14	10	6	4.2	79
Fort Wayne	801	986.8	1018.0	79	57	67.8	3.2	95	8	42	14	5	0	58	74	1.56	-1.51	.69	6	3	.0	0	8.9	ENE	52	W	9	7	11	12	6.0	54
Indianapolis	793	987.8	1017.6	81	59	69.8	2.6	95	8	45	30	6	0	60	75	2.43	-1.24	1.36	4	3	.0	0	5.4	N	24	W	9	9	9	12	5.6	77
South Bend	768	989.5	1017.6	78	58	68.1	3.6	96	8	41	30	7	0	59	76	3.40	-.31	2.24	7	3	.0	0	7.7	NNW	*25	WNW	19	6	7	17	6.6	--
IOWA																																
Burlington	694	991.9	1017.7	81	58	69.3	2.6	97	6+	45	30	8	0	57	71	1.50	-2.63	.83	6	6	.0	0	8.5	S	*43	NW	18	14	7	9	4.6	77
Des Moines	948	987.5	1018.5	77	56	66.6	.8	95	2	40	30	7	0	57	75	2.54	-1.10	.89	8	7	.0	0	8.9	S	26	NW	24	14	8	8	4.3	75
Dubuque	1065	992.6	1018.2	74	55	64.8	2.5	92	7	44	30+	6	0	55	72	4.12	-.06	1.58	8	6	.0	0	----	---	--	---	--	15	3	12	4.8	--
Sioux City	1094	976.3	1017.5	78	54	65.6	1.2	93	4	37	30	7	0	55	72	1.87	-1.37	.68	9	5	.0	0	9.2	SE	28	N	29	13	8	9	4.3	81
Waterloo	870	985.8	1017.6	75	54	64.5	1.3	94	7+	40	28+	7	0	55	77	5.06	.54	1.91	9	4	.0	0	5.9	S	*22	WNW	24	13	6	11	4.7	--
KANSAS																																
Concordia (U)	1375	967.5	------	82	59	70.7	1.2	94	6+	43	30	10	0	--	64	2.61	.15	1.58	5	4	.0	0	5.9	Φ S	19	N	24	19	5	6	2.9	82
Dodge City	2594	929.6	1016.3	83	58	70.8	.9	96	14+	41	30	9	0	52	56	2.91	1.20	2.27	6	5	.0	0	14.1	SSE	36	S	20	18	6	6	3.4	82
Goodland	3645	890.6	1016.1	82	51	66.5	1.9	99	3+	36	30	9	0	43	51	.65	-.72	.37	4	2	.0	0	12.3	SSE	*30	NNW	21+	19	6	5	3.2	--
Topeka	877	981.7	1017.1	83	57	70.2	1.2	94	8+	43	30+	10	0	58	71	1.38	-2.06	.79	4	7	.0	0	9.4	S	29	S	7	17	5	8	3.7	76
Wichita	1321	968.2	1016.1	84	61	72.4	.7	94	6+	50	30+	10	0	59	65	2.25	-.98	2.03	5	3	0	0	11.0	S	34	NW	8	18	6	6	3.7	76
KENTUCKY																																
Lexington	979	981.8	1018.0	80	61	70.5	1.0	95	5	51	14	8	0	60	76	5.20	2.37	3.05	5	3	.0	0	6.6	NNE	--	---	--	15	6	9	4.7	--
Louisville	474	997.8	1017.1	81	60	70.5	.3	94	5	48	14	8	0	59	71	3.00	.30	1.44	6	3	.0	0	4.2	SE	20	NE	30	15	5	10	4.9	59
LOUISIANA																																
Alexandria	107	1010.5	1015.0	88	64	76.0	----	93	20	53	30	15	0	67	79	2.25	----	.87	9	4	.0	0	4.9	ENE	--	---	--	19	5	6	3.6	--
Baton Rouge	64	1011.9	1015.0	87	68	77.4	-.1	92	22+	57	30	13	0	69	81	1.17	-3.15	.88	8	6	.0	0	7.6	NE	--	---	--	16	5	9	4.5	--
Lake Charles	12	1012.9	1014.3	89	69	79.0	.4	91	8+	60	29+	18	0	68	73	2.58	-1.95	1.28	4	4	.0	0	2.6	N	*14	N	28+	18	6	6	3.7	--
New Orleans (U)	9	------	------	87	74	80.5	.2	94	5	69	29	12	0	--	72	3.97	-1.85	2.07	7	3	.0	0	6.5	---	23	E	14	17	9	4	4.2	73
New Orleans	3	1011.9	1014.2	87	69	78.2	-1.3	93	22+	60	13	12	0	70	80	4.11	-.95	3.23	4	3	.0	0	6.9	NE	*20	W	27+	16	7	7	3.7	--
Shreveport	252	1006.8	1015.8	88	67	77.5	-1.3	95	8+	57	14+	16	0	65	71	4.98	2.76	3.65	7	5	.0	0	6.9	NNE	--	---	--	21	4	5	3.2	80
MAINE																																
Caribou	624	994.3	1017.5	67	44	55.5	2.3	83	9+	29	17	0	2	46	74	2.60	-.90	1.15	10	3	.0	0	10.0	S	*37	W	10	3	10	17	7.4	--
Portland	61	1014.4	1018.6	70	47	58.8	.2	93	8	33	26+	1	0	51	78	5.01	1.93	3.00	9	1	.0	0	9.3	S	*62	SE	12	10	8	12	5.5	62
MARYLAND																																
Baltimore (U)	14	------	------	79	65	72.1	1.7	94	1	54	27	1	0	--	--	6.65	3.19	4.04	7	--	.0	0	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1013.8	1018.8	78	60	69.1	1.2	90	1	47	27	1	0	62	83	6.38	2.92	4.33	8	5	.0	0	7.5	W	33	W	12	8	12	10	5.8	56
Frederick	294	------	------	77	57	66.9	-1.6	89	1	45	26	0	0	--	--	2.45	-1.11	1.23	9	--	.0	0	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.(R)	629	994.4	------	69	53	61.0	----	90	8	45	26	1	0	--	81	6.83	3.06	3.27	9	--	.0	0	13.0	NE	92	SSE	12	--	--	--	----	57
Boston	15	1016.9	1018.3	71	57	63.7	-.6	93	8	48	17	2	0	53	73	5.97	2.98	3.09	9	1	.0	0	11.4	WSW	57	S	12	8	10	12	6.1	61
Nantucket	43	1018.0	1018.6	69	55	62.0	.0	80	10	44	17	0	0	57	85	2.57	-.80	1.24	8	2	.0	0	12.0	NE	56	S	12	6	4	20	7.1	51
Pittsfield	1170	------	------	70	48	59.1	.8	86	8	38	15	0	0	--	--	7.95	3.72	3.41	12	--	.0	0	----	---	--	---	--	--	--	--	----	--
Worcester	986	981.7	1018.7	68	51	59.5	-1.6	85	8	38	26	0	0	51	77	6.62	3.01	4.79	11	0	.0	0	7.8	NE	*30	NNE	12	8	11	11	6.0	--
MICHIGAN																																
Alpena	689	993.6	------	69	44	56.2	-1.8	93	8+	27	16	2	3	52	79	2.06	-1.75	.50	12	4	.0	0	5.2	ΦSE	27	N	8	8	9	13	6.3	49
Detroit(City AP)	619	991.5	1018.2	77	57	66.9	2.6	94	1	41	14	3	0	55	70	.78	-2.00	.59	6	2	.0	0	8.0	N	45	NE	1	7	12	11	6.0	63
Detroit (M. Wayne Co.)	630	994.2	1018.1	77	55	66.2	----	94	1	37	14	4	0	56	73	.43	----	.27	7	4	.0	0	8.0	NNE	--	---	--	7	10	13	6.3	--
Detroit (Willow Run)	722	989.5	1017.9	78	56	67.1	2.8	94	8+	41	14	4	0	55	71	1.24	-1.78	.87	8	2	.0	0	9.7	NE	*35	N	1	7	9	14	6.3	--
Escanaba (U)	594	995.6	------	67	51	58.7	1.3	86	7	36	30	0	0	--	80	4.45	1.33	1.85	12	7	.0	0	9.7	---	36	NW	1	7	13	10	5.8	50
Flint	761	990.9	1018.6	75	51	63.0	1.4	95	8	34	30+	2	0	54	76	2.06	-1.42	1.26	7	4	.0	0	7.0	SSW	*46	NNW	1	7	7	16	6.7	--
Grand Rapids	681	992.9	1018.2	77	54	65.6	3.7	96	7	37	30	4	0	55	71	1.10	-2.34	.69	6	1	.0	0	7.7	E	25	NW	8	7	12	11	6.1	52
Lansing	852	986.1	1018.1	76	52	64.0	2.2	94	8+	35	30+	3	0	54	76	1.39	-1.66	1.15	4	2	.0	0	10.2	SSE	49	N	1	8	9	13	6.2	60
Marquette (U)	677	990.5	------	66	50	58.0	.2	92	6	39	30+	2	0	--	74	3.58	.15	1.06	14	6	.0	0	7.7	Φ W	25	SW	5	8	6	16	6.6	56
Muskegon	627	994.9	1018.0	75	54	64.4	3.1	90	8+	36	30	2	0	56	78	1.78	-1.56	.61	10	6	.0	0	7.6	ENE	*21	W	13	10	9	11	5.5	--
Sault Ste. Marie	721	995.3	1018.1	65	48	56.3	1.1	89	7	31	30	0	1	51	83	3.75	.26	1.08	12	5	.0	0	8.5	E	*23	NW	27+	4	9	17	7.0	45
MINNESOTA																																
Duluth	1409	976.3	1018.0	65	46	55.5	.1	89	3	29	29	0	2	48	80	1.66	-1.56	.52	11	3	.0	0	11.7	E	53	NW	1	8	7	15	6.4	50
Intern'l Falls	1179	976.0	1017.4	66	41	53.4	.1	88	3	25	30	0	6	46	77	1.88	-.92	.57	9	4	.0	0	6.5	SE	*23	SE	5	3	12	15	6.7	--
Minneapolis	830	984.1	1017.5	71	52	61.8	-.4	95	6	36	30	5	0	52	73	3.79	.94	1.71	10	2	.0	0	8.9	S	26	SW	3	13	6	11	5.1	56
Rochester	1017	978.7	1018.0	72	52	61.8	1.0	93	6+	36	30	7	0	54	79	3.23	-.82	.97	8	4	.0	0	8.9	SSW	--	---	--	13	4	13	5.2	--
St. Cloud	1034	979.7	1017.6	70	50	59.9	1.1	94	5	31	30	5	1	51	78	1.71	-1.29	.51	9	2	.0	0	----	---	--	---	--	13	6	11	4.9	--
MISSISSIPPI																																
Jackson	305	1003.4	1015.5	86	67	76.2	-.5	94	7	56	30	11	0	67	78	2.10	.00	1.57	7	7	.0	0	4.1	NW	29	SE	5	17	4	9	4.5	61
Meridian	292	1001.6	1015.4	85	65	75.4	-.5	96	6	56	13	12	0	68	83	3.88	1.27	1.96	7	3	.0	0	5.5	NE	*25	ENE	16	15	4	11	5.0	--
Vicksburg (U)	234	1006.3	------	85	68	76.5	-.5	94	6	59	12	9	0	--	--	1.71	-.06	1.44	4	5	.0	0	5.9	---	24	E	22	14	8	8	4.4	68
MISSOURI																																
Columbia	778	988.2	1016.3	87	60	73.5	4.8	100	1	47	14+	12	0	55	59	.30	-4.32	.09	4	1	.0	0	8.8	SE	26	S	18	18	4	8	3.7	75
Kansas City	741	982.4	1016.9	84	63	73.9	3.3	98	2	49	30	9	0	56	58	.40	-3.45	.18	6	4	.0	0	5.6	SW	24	N	24	16	5	9	4.1	69
St. Joseph	809	982.4	------	81	58	69.4	-.5	95	6+	42	30	8	0	--	--	2.13	-2.16	1.24	5	6	.0	0	7.1	N	*27	NW	8	17	4	9	3.8	--
St. Louis (RFC)	465	------	------	85	66	75.4	4.0	99	5	55	30+	9	0	--	--	1.38	-2.00	1.35	3	--	.0	0	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Ø										No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F. or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F.	°F.	°F	°F.	°F		°F.				°F.	%	In.	In.	In.			In.	In.	M p h		M. p. h.			0–3	4–7	8–10	0–10	%
MISSOURI (Cont'd.)																																
St. Louis	552	996.6	1017.1	84	64	74.2	3.8	99	7	51	13	10	0	60	65	0.76	-2.78	0.47	6	3	0.0	0	8.9	S	26	S	24	14	7	9	4.7	72
Springfield	1265	970.2	1017.1	88	59	73.2	4.1	100	6	41	13	14	0	57	65	1.42	-2.14	.45	9	5	.0	0	9.6	SSE	26	N	30+	17	6	7	3.8	81
MONTANA																																
Billings	3567	893.7	1016.6	76	48	62.2	2.2	96	4	36	30+	3	0	36	41	.16	-1.16	.10	3	2	0	0	10.0	SW	30	N	7	11	11	8	4.7	80
Butte	5530	833.1	1019.3	69	35	51.9	1.9	80	19+	21	22	0	10	34	54	.51	-.69	.23	4	4	.0	0	7.0	SSE	*35	SW	4	12	8	10	4.6	--
Glasgow	2277	942.1	1016.5	75	45	60.2	3.0	99	4	33	30+	3	0	35	42	.04	-1.18	.03	2	1	.0	0	----	---	--	---	--	13	10	7	4.3	--
Great Falls	3664	891.0	1017.0	73	47	60.2	3.3	89	3	33	8	0	0	33	39	.13	-1.01	.17	1	1	0	0	10.1	SW	69	SW	4	14	8	8	4.4	84
Havre (U)	2488	928.2	1016.9	76	43	59.3	2.3	95	1	29	22	3	2	--	--	.19	-.96	.14	5	0	0	0	7.4	Φ W	70	SW	4	13	11	6	4.2	84
Helena	3893	876.4	1018.1	73	41	57.0	2.1	87	19	25	22	0	4	36	48	.13	-1.03	.10	3	1	0	0	7.9	WNW	46	W	4	13	13	4	4.2	82
Kalispell	2965	------	------	73	36	54.7	.2	89	3	23	22	0	10	--	--	.33	-.97	.21	4	1	0	0	----	---	--	---	--	12	10	8	4.4	--
Miles City	2629	932.6	1016.7	78	48	62.9	2.5	104	4	37	26+	5	0	38	42	T	-1.20	T	0	0	0	0	9.1	SSE	*29	NW	20	14	8	8	4.5	--
Missoula	3200	904.8	1019.3	74	38	56.4	.6	86	2+	26	22	0	5	38	55	.37	-.70	16	5	5	.0	0	6.2	NW	33	SW	4	11	14	5	4.6	71
NEBRASKA																																
Grand Island	1841	951.2	1017.0	80	53	66.5	-.3	97	4+	33	30	7	0	52	63	2.10	-.47	.97	9	7	0	0	[illegible]	S	--	--	--	18	7	5	3.4	--
Lincoln (U)	1166	------	------	80	57	68.6	.5	97	4	40	30	7	0	--	--	2.97	.05	1.80	9	7	0	0	8.4	Φ S	31	SE	20+	16	7	7	3.8	82
Norfolk	1544	961.4	1016.7	77	53	65.2	.7	95	5+	36	30	7	0	53	66	1.61	-1.16	.60	7	5	.0	0	----	---	--	--	--	13	10	7	4.1	--
North Platte	2779	918.1	1015.8	81	50	65.2	1.4	99	3	28	30	9	1	47	57	.35	-1.40	.19	4	5	.0	0	11.3	SSE	37	SE	20	18	6	6	3.5	75
Omaha	978	977.7	1017.4	78	57	67.7	.7	94	6+	41	30	7	0	57	72	4.04	.88	1.15	10	8	.0	0	9.2	SSE	34	SE	17	14	9	7	4.0	70
Omaha N.Omaha AP	1323	969.5	------	76	56	66.1	.9	92	6+	37	30	6	0	--	--	3.81	.65	1.38	9	8	.0	0	----	---	--	---	--	16	7	8	4.3	--
Scottsbluff	3950	881.8	1016.3	79	47	62.7	.5	99	4+	37	30	6	0	43	55	.65	-.64	.19	8	3	0	0	10.3	ESE	*29	NNE	26	16	9	5	3.6	--
Valentine	2587	926.2	------	77	47	62.4	.8	101	4	28	30	7	1	--	62	1.86	.66	1.00	5	2	.0	0	9.7	Φ N	40	S	20	18	5	7	3.5	74
NEVADA																																
Elko	5075	846.6	1015.9	82	40	61.0	3.2	89	12	27	23+	0	2	26	28	.04	-.35	.01	4	1	0	0	5.5	SW	*35	SSE	3	20	3	7	3.2	--
Ely	6257	812.1	1014.8	80	41	60.6	2.8	87	12	26	23	0	4	32	38	.98	.30	.53	7	8	.0	0	10.3	S	37	NE	30	14	11	5	3.9	83
Las Vegas	2162	945.8	1010.1	96	68	82.0	1.3	106	12	58	30	27	0	40	52	.23	-.11	.23	1	2	0	0	8.9	SSW	*29	SSW	14	19	9	2	2.4	88
Reno	4404	862.9	1015.5	86	37	61.0	.5	92	12	27	22	6	5	36	44	T	-.22	T	0	1	.0	0	4.3	SW	27	W	3+	24	3	3	2.1	96
Winnemucca	4299	869.3	1015.9	84	39	61.9	2.0	91	27+	27	23	4	3	29	32	.73	.39	.66	4	4	.0	0	5.9	W	34	S	11+	20	4	6	3.1	78
NEW HAMPSHIRE																																
Concord	339	1007.8	1021.0	72	48	59.7	.9	94	8	35	17	1	0	51	75	7.78	4.39	4.12	8	2	.0	0	5.3	NW	42	E	12	7	10	13	6.3	56
Mt.Washington Obs.	6262	811.4	------	50	39	44.3	3.2	67	9	29	14+	0	5	--	76	8.09	1.53	4.80	12	1	.0	0	21.5	W	‡112	WNW	12	7	7	16	6.5	51
NEW JERSEY																																
Atlantic City(U)	30	------	------	74	63	68.0	-.3	87	1	53	14	0	0	--	--	3.50	-.01	2.05	12	--	.0	0	11.5	---	58	WNW	12	--	--	--	----	--
Atlantic City	58	1016.0	1018.7	77	59	67.9	.5	88	1	48	23	0	0	61	81	4.03	.66	3.19	10	2	.0	0	10.8	ENE	60	NW	12	8	6	16	6.5	51
Newark	11	1017.6	1018.9	76	60	67.9	1.1	92	1	50	14	1	0	58	73	6.23	2.34	2.55	12	1	.0	0	8.5	NNE	*51	NE	12	8	12	10	5.8	--
Trenton (U)	56	1011.1	------	75	59	66.7	-.3	88	1	49	27	0	0	--	--	6.70	2.95	4.01	11	2	.0	0	7.0	---	56	NW	12	7	12	11	6.1	57
NEW MEXICO																																
Albuquerque	5310	851.3	1013.6	85	59	71.8	1.9	91	13+	48	23	8	0	43	66	.56	-.49	.30	4	6	.0	0	7.4	ESE	35	W	30+	15	11	4	3.3	83
Clayton	4969	849.0	1015.6	80	52	65.7	-.2	91	14	42	26	2	0	--	--	5.22	3.35	3.48	9	15	.0	0	----	---	--	---	--	20	5	5	3.4	--
Raton	6379	810.4	1016.3	79	46	62.6	1.8	90	5	37	25	1	0	--	--	2.23	.22	1.05	13	14	.0	0	----	---	--	---	--	13	12	5	4.2	--
Roswell	3612	895.0	1014.2	89	54	71.2	-.1	102	14	40	25	17	0	50	51	.45	-1.55	.14	7	4	.0	0	7.7	---	34	N	28	19	7	4	3.2	--
Silver City	5433	836.4	1012.7	86	57	71.5	----	93	13	48	24	3	0	--	--	.13	----	.03	8	8	.0	0	----	---	--	---	--	18	11	1	3.0	--
NEW YORK																																
Albany	277	1014.8	1018.8	73	53	62.8	1.2	89	8	43	3	0	0	55	79	7.89	4.74	3.66	10	3	.0	0	7.1	S	37	N	12	7	10	13	6.5	55
Binghamton	1590	959.8	1018.9	70	54	62.2	2.4	85	8	45	30+	0	0	54	80	5.57	2.31	2.77	12	5	.0	0	7.6	SW	42	NW	30	6	9	15	6.7	61
Buffalo	693	990.4	1018.5	74	54	64.3	1.9	90	7	42	30+	1	0	55	77	1.20	-1.81	.50	6	1	.0	0	8.1	S	30	SW	9	7	3	20	6.9	70
New York (U)	10	1017.0	------	73	61	66.9	-.4	88	1	53	14	0	0	--	--	8.16	4.49	4.75	11	1	.0	0	9.4	E	61	NE	12	8	10	12	5.9	56
New York(Laguardia)	19	1016.9	1018.9	75	62	68.0	-.4	90	1	55	27+	1	0	57	72	7.61	4.06	3.70	12	1	.0	0	11.4	NE	70	NE	12	8	9	13	6.0	--
Rochester	543	999.1	1018.4	75	54	64.5	2.5	95	7	43	14	2	0	55	75	.28	-2.38	.12	5	0	.0	0	8.4	SSW	29	W	9	7	8	15	6.7	67
Schenectady	217	------	------	73	54	63.4	1.6	88	8	45	15	0	0	--	--	7.30	4.04	4.44	11	1	.0	0	----	---	--	---	--	14	8	8	4.4	--
Syracuse	424	996.4	1018.4	74	54	63.8	.4	91	8+	45	3	2	0	55	75	2.93	.02	1.58	9	3	.0	0	8.5	ESE	35	W	30	6	10	14	6.6	51
NORTH CAROLINA																																
Asheville (U)	2203	939.6	------	77	59	68.1	.2	90	6	45	14	1	0	--	--	2.21	-.51	.87	11	4	.0	0	6.4	---	26	S	10+	7	9	14	6.2	51
Cape Hatteras	7	1016.2	1016.8	81	68	74.3	-1.0	88	10+	56	15	0	0	67	79	3.24	-2.85	1.74	7	3	.0	0	10.2	NE	72	S	12	15	5	10	4.7	62
Charlotte	725	990.4	1017.9	83	64	73.6	1.0	95	6	52	14	8	0	63	76	1.48	-2.17	1.01	8	2	.0	0	8.5	NE	23	SE	10	10	6	14	6.2	59
Greensboro	891	987.2	1019.1	79	61	69.9	-.8	91	5	46	14	1	0	62	82	2.32	-1.34	.70	8	6	.0	0	5.7	ENE	24	NW	19+	6	13	11	6.2	66
Raleigh	433	1004.2	1018.1	81	60	70.8	-1.8	92	5	48	14	3	0	63	81	3.05	-1.44	1.75	6	3	.0	0	6.2	N	*29	N	11	9	11	10	5.5	59
Wilmington	30	1015.4	1016.7	84	65	74.5	-.9	90	20+	55	27	3	0	67	82	9.06	3.11	6.26	7	1	.0	0	8.1	NNE	53	NW	11	10	10	10	5.5	66
Winston-Salem	967	983.3	1018.5	79	61	70.3	-.6	91	5	50	14	1	0	61	79	3.69	.20	1.39	9	6	.0	0	7.0	ENE	*24	ENE	25+	8	9	13	6.1	--
NORTH DAKOTA																																
Bismarck	1650	957.0	1017.2	75	44	59.5	1.0	97	2	23	30	5	3	41	54	.29	-1.14	.14	4	4	.0	0	10.6	WNW	42	NW	29	13	11	6	4.4	83
Devils Lake (U)	1471	963.1	------	72	45	58.7	2.4	95	2	32	30	2	1	--	62	.16	-1.91	.08	3	2	.0	0	7.7	Φ S	21	NW	24	11	10	9	4.8	72
Fargo	895	982.7	1017.3	73	47	59.9	1.0	99	2	31	30	3	1	50	73	1.26	-.46	.59	5	4	.0	0	13.9	S	88	N	1	11	9	10	5.4	57
Williston (U)	1877	948.9	1016.8	74	46	60.2	3.0	100	4	30	30	3	2	41	51	.05	-1.16	.02	4	0	.0	0	6.4	Φ S	26	W	25	14	12	4	4.0	83
OHIO																																
Akron	1210	980.5	1018.7	77	56	66.4	1.8	90	8+	40	14	2	0	57	75	.20	-3.43	.11	4	0	.0	0	8.4	SE	--	---	--	10	6	14	5.8	--
Cincinnati Obs.	761	------	------	81	60	70.7	1.8	95	5	49	30+	7	0	--	--	1.42	-1.46	.74	5	3	.0	0	4.1	---	15	W	9	--	--	--	----	66
Cincinnati	869	986.1	1018.1	81	60	70.5	3.2	95	8	49	30+	7	0	59	72	1.07	-1.90	.52	4	1	.0	0	6.0	NE	*21	SW	19	12	8	10	5.4	--
Cleveland	787	990.2	1018.1	75	55	65.0	-.5	88	4	38	14	0	0	58	81	1.84	-1.29	1.39	8	3	.0	0	8.3	S	42	N	1	11	4	15	6.0	44
Columbus (U)	724	------	------	79	61	69.9	2.1	93	8	48	14	4	0	--	--	.88	-1.70	.36	5	2	.0	0	----	---	--	---	--	--	--	--	----	--
Columbus	815	988.3	1018.4	80	56	68.3	1.8	93	8+	40	14	4	0	59	76	.83	-2.08	.41	6	2	.0	0	5.3	N	20	S	19	11	6	13	5.7	62
Dayton	1002	981.8	1017.9	80	59	69.5	2.6	94	8+	45	14	6	0	57	69	.90	-1.90	.42	5	1	0	0	6.9	SSE	27	W	12	10	7	13	5.6	67
Mansfield	1296	------	------	76	56	66.1	----	90	4	42	30	1	0	--	--	1.12	----	.67	6	4	.0	0	----	---	--	---	--	9	5	16	6.2	--
Sandusky (U)	603	996.2	------	77	61	68.9	2.4	93	4+	46	14	4	0	--	--	2.63	-.63	1.46	6	5	.0	0	6.7	---	26	NE	1	10	11	9	5.0	65
Toledo	676	992.9	1018.3	78	55	66.4	2.2	95	4+	34	14	3	0	58	78	2.27	-.75	1.78	9	5	.0	0	6.6	ENE	32	W	9	6	11	13	6.2	78
Youngstown	1178	976.0	1018.4	76	54	64.9	.2	88	8	39	14	0	0	56	78	.27	-3.31	.17	5	1	.0	0	6.7	SE	*40	N	1	8	8	14	6.4	--
OKLAHOMA																																
Oklahoma City	1280	973.2	1016.2	86	63	74.5	.5	96	18	53	11	15	0	59	64	1.62	-1.81	1.26	4	4	.0	0	11.3	SSE	40	SW	20	20	5	5	3.2	77
Tulsa	672	991.9	1016.2	88	63	75.4	1.6	96	6	49	13	14	0	61	67	.89	-3.36	.73	6	3	.0	0	6.9	SSE	25	SW	20	16	7	7	4.0	74
OREGON																																
Astoria	8	1018.0	1018.7	68	47	57.3	-3.0	85	9	37	21	0	0	51	56	1.69	-1.35	.98	7	2	.0	0	8.6	NNW	*29	SSW	4	10	9	11	5.8	--
Burns (U)	4140	875.0	1017.2	79	41	60.3	2.0	88	26	27	22	0	1	34	41	.54	.11	.49	3	4	.0	0	----	---	--	---	--	22	6	2	2.2	--
Eugene	361	1004.1	1017.6	77	46	61.6	.7	95	8	36	21+	2	0	--	--	.75	-.85	.65	4	2	.0	0	7.5	---	*29	WSW	3	9	14	7	5.0	--
Meacham	4050	------	------	69	44	56.4	.7	84	12+	32	21	0	1	--	--	.92	-.54	.67	4	2	.0	0	----	---	--	---	--	18	6	6	3.4	--
Medford	1312	968.5	1016.0	86	48	66.9	2.5	97	10	36	21	10	0	45	53	.18	-.47	.10	3	1	.0	0	4.6	WNW	*18	WNW	11+	19	8	3	2.7	--
Pendleton	1492	963.8	1017.3	78	51	64.3	-.3	89	12	38	7	0	0	44	49	.49	-.22	.30	4	3	.0	0	9.2	SE	*46	WSW	4	18	6	6	3.3	--
Portland	21	1011.9	1017.6	73	50	61.5	-.8	89	9	41	22+	0	0	49	47	1.37	-.47	.60	7	1	.0	0	6.0	NW	23	SW	4	5	12	13	6.0	58
Roseburg	505	998.3	1016.9	80	47	63.6	1.8	96	10	38	22	2	0	--	--	.65	-.46	.58	4	2	.0	0	4.4	Φ N	22	N	20+	12	13	5	4.4	70
Salem	195	1010.5	1018.1	78	47	62.4	.0	93	10+	38	21+	4	0	50	69	.65	-.84	.31	7	3	.0	0	4.7	N	*18	S	4	8	12	10	5.4	--
Sexton Summit(R)	3836	885.5	1014.9	73	51	61.6	1.8	85	10+	37	21	0	0	--	--	.36	-.81	.17	4	2	.0	0	11.2	N	--	---	--	20	7	3	2.5	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

SEPTEMBER 1960

		Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
State and station	Elevation (ground)	ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
PACIFIC AREA																																
Canton Island	8	1008.5	1008.9	90	78	84.0	-0.4	91	21+	76	18+	22	0	72	73	0.53	-0.16	0.32	9	0	0.0	0	15.1	E	25	E	18+	0	0	30	10.0	--
Guam (R)	361	------	------	87	73	79.7	.7	88	28+	69	7	0	0	--	--	9.35	-5.05	1.62	26	10	.0	0	3.6	Φ E	17	E	30	--	--	--	----	39
Johnston Is.	7	1011.5	1012.1	87	77	81.6	----	88	30+	72	15	0	0	73	75	3.83	----	2.35	19	0	.0	0	13.0	---	34	E	2	0	16	14	6.8	71
Koror (R)	94	1005.8	1009.6	88	75	81.8	.7	91	26	73	29+	5	0	77	86	20.79	7.48	3.44	28	5	.0	0	4.4	W	24	SW	15	0	1	29	9.7	41
Kwajalein	8	1009.5	1010.4	87	77	82.1	----	90	6	73	21+	1	0	75	81	11.89	----	2.67	24	1	.0	0	8.4	E	30	S	7	0	14	16	7.5	--
Ponape (R)	123	1004.1	1009.4	87	74	80.5	.4	90	27+	71	1	3	0	75	87	13.11	-2.85	2.72	25	6	.0	0	2.8	S	18	NE	16	0	4	26	9.1	53
Truk, Moen Is.	8	1009.1	1009.4	87	76	81.4	.7	90	14	72	1	1	0	76	77	8.49	-4.12	2.91	21	5	.0	0	4.4	NNE	26	SW	28	0	9	21	8.3	68
Wake Island	11	1011.9	1012.3	88	77	82.8	.6	90	7+	73	11	6	0	75	77	4.93	-.55	1.50	21	5	.0	0	13.0	ENE	*23	ENE	11+	4	13	13	6.4	--
Yap (R)	55	1007.1	1009.1	88	76	81.6	-.2	91	27	73	1	1	0	76	85	10.63	-3.53	3.07	21	0	.0	0	3.3	SE	19	SW	14	0	2	28	9.5	54
Majuro	10	1009.8	1010.1	86	77	81.7	----	88	30+	72	3	0	0	--	--	16.93	----	3.31	25	4	.0	0	7.1	Φ E	26	E	13	--	--	--	----	--
PENNSYLVANIA																																
Allentown	376	1004.9	1019.3	74	56	64.8	.1	88	1	44	15	0	0	58	83	7.54	4.07	3.56	13	5	.0	0	6.2	NE	*30	WSW	12	6	11	13	6.3	--
Eire	732	------	1018.0	75	58	66.3	3.1	92	7	45	14	2	0	57	74	1.45	-1.94	1.04	3	5	.0	0	10.5	SSE	*29	SE	25+	6	9	15	6.5	--
Harrisburg	335	1004.9	1018.7	76	59	67.4	1.3	91	1	47	15	1	0	58	77	5.34	2.71	1.76	13	5	.0	0	4.1	ESE	24	NW	13	5	10	15	6.7	46
Philadelphia (U)	35	------	------	77	63	69.9	.6	91	1	55	27	1	0	--	--	----	----	----	--	--	---	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1013.8	1018.4	76	58	67.3	-.4	88	1	48	14	0	0	59	78	8.78	5.32	5.45	9	1	.0	0	7.3	ENE	49	NE	12	5	14	11	6.3	55
Pittsburgh (U)	749	------	------	78	60	69.3	1.4	90	1	50	30+	1	0	--	--	2.54	-.23	.99	8	--	.0	0	----	---	--	---	--	--	--	--	----	51
Pittsburgh	1151	988.3	1019.0	76	56	66.1	1.2	87	1	41	14	0	0	56	76	1.84	-1.13	.64	9	3	.0	0	6.4	SE	*32	NNE	4	9	7	14	6.3	60
Reading (U)	266	1006.5	------	76	59	67.4	.3	90	1	48	15	1	0	--	--	5.92	2.64	3.87	11	3	.0	0	7.5	---	40	W	1	5	12	13	6.6	55
Scranton	940	985.0	1019.3	72	54	62.8	-.4	87	1	42	15	0	0	55	79	7.78	4.56	3.09	12	7	.0	0	7.2	SW	27	W	13	8	6	16	6.3	53
Williamsport	527	1000.2	1019.2	74	56	64.9	.3	92	1	44	15	1	0	57	82	6.35	3.02	1.89	12	5	.0	0	5.6	E	*27	WNW	9	6	6	18	7.0	--
RHODE ISLAND																																
Block Island	110	1013.5	------	69	57	63.2	-.3	78	10	46	23	0	0	--	--	11.36	8.38	8.52	6	2	.0	0	----	---	--	---	--	9	4	17	6.7	--
Providence	55	1012.7	1018.8	72	53	62.5	-.2	88	8	37	17	0	0	54	78	5.98	2.79	3.28	9	2	.0	0	10.3	N	*58	S	12	7	12	11	6.0	--
SOUTH CAROLINA																																
Charleston (U)	9	------	------	83	72	77.2	-.5	88	6	64	27	0	0	--	--	8.17	2.86	4.24	10	--	.0	0	11.2	---	57	NW	11	--	--	--	----	--
Charleston	41	1014.8	1016.9	86	66	75.9	-.4	91	21+	58	27	4	0	69	84	7.60	2.13	2.98	9	6	.0	0	9.0	NNE	52	NW	11	7	13	10	5.9	67
Columbia	217	1003.9	1016.7	86	66	75.9	.0	95	6	55	27+	10	0	66	77	3.94	-.48	2.28	6	4	.0	0	5.5	NE	20	N	11	8	12	10	5.6	62
Florence	146	1010.6	1016.5	85	65	74.8	-.5	92	6	54	27	7	0	66	80	4.65	.37	3.62	5	2	.0	0	7.3	NNE	*28	NNW	11	11	12	7	5.1	--
Greenville	1018	980.8	1017.8	82	65	73.3	.2	94	6	55	14	7	0	64	78	4.76	1.17	1.43	11	5	.0	0	6.6	NE	28	S	10	10	8	12	5.9	56
Spartanburg	801	987.9	1017.7	80	64	72.0	-1.2	94	6	52	14	2	0	63	79	6.80	3.12	3.12	12	4	.0	0	8.1	NE	*21	ENE	25	10	7	13	6.1	--
SOUTH DAKOTA																																
Huron	1282	969.9	1017.1	75	48	61.2	-1.6	99	6	27	30	6	1	52	75	2.37	.64	1.11	6	5	.0	0	10.8	SSE	35	S	6	16	6	8	4.2	75
Rapid City	3165	903.8	1017.1	78	49	63.6	3.1	104	4+	34	30	7	0	37	43	.68	-.50	.58	4	3	T	0	11.7	NNW	42	N	16	17	8	5	3.3	80
Sioux City	1420	965.8	1017.2	74	52	62.8	.4	94	4	34	30	6	0	52	69	2.21	-.72	.99	10	5	.0	0	8.9	S	*37	N	7	13	9	8	4.6	--
TENNESSEE																																
Bristol	1519	964.3	1018.2	82	60	71.0	2.5	93	6	45	14	1	0	59	73	1.13	-1.66	.58	7	2	.0	0	5.3	NE	*17	ESE	17+	9	12	9	5.4	--
Chattanooga	670	989.4	1016.8	83	63	72.8	.3	96	6	50	14	8	0	63	79	5.92	3.23	2.49	9	3	.0	0	4.9	NNE	18	SW	17	10	7	13	5.5	63
Knoxville	950	982.3	1017.5	82	64	73.1	1.0	96	6	51	14	6	0	63	77	4.58	2.05	1.26	10	1	.0	0	5.6	NE	47	SW	3	8	11	11	5.8	52
Memphis (U)	271	------	------	85	68	76.6	1.8	95	6	59	13+	8	0	--	--	3.79	1.29	2.56	5	--	.0	0	----	---	--	---	--	--	--	--	----	--
Memphis	263	1001.6	1016.2	86	66	76.1	1.8	97	7+	55	13	10	0	64	70	4.05	1.50	2.71	6	3	.0	0	6.3	E	31	NE	8	20	6	4	3.3	77
Nashville	577	996.6	1016.5	85	62	73.6	.4	99	7+	51	14	8	0	63	76	3.96	1.22	2.48	6	3	.0	0	5.0	N	19	NW	17	13	9	8	4.8	65
Oak Ridge	905	985.1	------	81	63	71.9	1.1	93	6	50	14	5	0	--	--	4.64	2.09	2.26	7	2	.0	0	2.5	---	*19	---	3+	12	7	11	5.3	--
TEXAS																																
Abilene	1759	955.0	1014.9	90	65	77.3	1.8	100	15+	53	28+	21	0	56	54	1.43	-1.17	1.11	6	2	.0	0	8.4	SE	34	NW	23	19	7	4	3.2	75
Amarillo	3590	891.6	1015.3	82	57	69.5	.2	92	14	44	26	2	0	53	60	4.22	1.94	2.49	6	5	.0	0	11.3	S	34	N	15	21	6	3	2.7	88
Austin	615	993.2	1014.8	91	68	79.3	.0	96	19+	59	29	23	0	64	64	1.68	-2.38	.77	4	2	.0	0	7.1	SSE	36	NW	24	19	8	3	3.1	81
Brownsville	16	1011.5	1014.1	88	70	78.7	-2.7	92	24+	61	30+	7	0	70	78	4.88	-.25	1.30	10	5	.0	0	7.5	NW	29	N	24	14	11	5	4.0	70
Corpus Christi	41	1013.5	1014.8	90	69	79.5	-1.2	93	13	62	29	20	0	69	73	1.61	-3.09	.64	8	4	.0	0	9.8	E	35	N	24	13	12	5	4.0	80
Dallas	487	997.0	1015.5	90	69	79.2	.3	98	19+	56	28+	21	0	62	59	2.61	-.10	1.22	6	3	.0	0	9.2	SSE	25	NE	26	22	3	5	2.7	72
Del Rio (U)	957	------	------	93	68	80.3	.5	100	15	58	26	23	0	--	--	2.68	.17	1.81	3	2	.0	0	----	---	--	---	--	--	--	--	----	--
El Paso	3920	887.6	1013.5	89	62	75.6	.7	95	14	50	26	15	0	46	37	.01	-1.12	.01	1	3	.0	0	10.1	SSE	32	E	7	19	8	3	2.8	87
Fort Worth	544	994.9	1015.5	91	68	79.6	1.4	100	19	56	12	22	0	61	59	1.25	-1.44	.59	7	1	.0	0	10.9	S	*28	WNW	23	21	6	3	2.6	--
Galveston (U)	7	------	------	85	75	79.7	.6	88	8+	66	28	0	0	--	--	1.21	-4.23	.85	4	--	.0	0	9.5	---	25	N	10	--	--	--	----	83
Galveston	5	1012.5	1014.8	86	74	80.0	-.4	89	18+	67	29+	0	0	67	67	.63	-5.19	.46	5	4	.0	0	8.2	N	--	---	--	19	8	3	3.1	--
Houston (U)	41	1009.5	------	89	71	79.7	-.3	95	5	61	28	18	0	--	--	1.86	-1.79	1.04	5	4	.0	0	7.6	Φ N	27	SE	3	17	10	3	3.6	73
Houston	50	1012.2	1014.9	90	69	79.5	.8	94	5	60	29	18	0	70	77	.61	-3.74	.49	4	5	.0	0	6.4	N	--	---	--	18	8	4	3.7	--
Laredo	500	999.3	1014.3	94	70	81.9	-1.6	98	23+	59	26	27	0	64	62	2.08	-1.08	1.27	7	8	.0	0	9.9	SE	*46	NE	24	17	10	3	3.2	--
Lubbock	3243	905.9	1015.6	86	59	72.5	1.3	97	14	44	26	15	0	55	57	.34	-2.51	.21	3	4	.0	0	11.7	S	*29	N	19	17	11	2	3.1	--
Midland	2854	917.0	1014.3	89	62	75.5	.2	98	15	50	26+	19	0	53	48	.14	-2.00	.11	3	1	.0	0	9.6	SE	*29	WNW	23	18	9	3	3.1	--
Port Arthur	16	1013.2	1014.6	88	69	78.7	.8	93	20+	59	29	18	0	69	78	2.69	-2.19	1.56	6	5	.0	0	8.6	N	26	SE	8+	15	9	6	3.9	73
San Angelo	1903	948.5	1014.5	94	65	79.3	2.8	102	15+	54	29+	24	0	57	51	.69	-1.61	.42	4	3	.0	0	11.0	S	*41	SE	2	23	3	4	2.7	--
San Antonio	792	990.2	1015.0	91	66	78.6	-.8	94	22+	57	29	23	0	64	67	.76	-2.61	.31	7	2	.0	0	8.0	NW	39	N	24	18	9	3	3.0	84
Victoria	110	1009.8	1014.4	89	68	78.3	-2.5	92	21	61	29+	16	0	68	73	.76	-2.93	.39	4	5	.0	0	8.3	SSE	‡40	NNW	24	16	11	3	3.4	--
Waco	500	996.6	1015.1	92	68	79.8	.9	98	3	57	12	24	0	62	60	1.12	-1.85	1.10	3	1	.0	0	11.3	SSE	*40	NW	23	22	3	5	2.6	--
Wichita Falls	1020	978.7	1014.9	92	66	78.9	2.5	102	14	56	13+	22	0	58	54	4.11	1.39	2.12	5	2	.0	0	8.6	S	*40	NW	23	20	5	5	3.1	--
UTAH																																
Milford	5028	846.3	1015.2	85	49	66.9	4.3	93	13	36	24	5	0	--	--	.88	.48	.27	7	11	.0	0	----	---	--	---	--	14	12	4	3.9	--
Salt Lake City	4220	868.9	1015.0	84	53	68.2	4.0	91	12	42	24	3	0	43	46	.49	-.25	.30	5	5	.0	0	9.1	SE	35	W	2	16	10	4	3.5	84
Wendover	4237	872.0	1013.2	83	59	70.6	----	93	13	48	23	2	0	--	--	.33	----	.31	2	3	.0	0	----	---	--	---	--	21	4	5	2.8	--
VERMONT																																
Burlington	331	1002.4	1018.6	70	49	59.5	-.4	92	8	35	16	1	0	52	81	4.90	1.76	2.48	9	3	.0	0	6.5	SSW	34	NW	12	7	6	17	6.9	55
VIRGINIA																																
Lynchburg	947	984.9	------	78	60	68.9	.1	90	5	48	27	1	0	--	--	4.26	1.16	1.91	8	6	.0	0	6.1	---	22	NW	12	3	16	11	6.5	54
Norfolk	26	1016.7	1018.3	80	65	72.8	.8	92	5	57	16	2	0	64	76	5.88	2.02	4.31	8	2	.0	0	9.9	ENE	73	W	12	7	10	13	6.1	59
Richmond	162	1012.5	1018.9	80	59	69.3	-1.0	89	5	47	27+	0	0	62	85	6.21	2.56	3.11	8	5	.0	0	5.9	NE	30	E	10	7	8	15	6.8	60
Roanoke	1174	976.7	1018.8	79	60	69.7	.6	92	5+	46	14	3	0	60	78	3.30	-.09	1.29	8	5	.0	0	4.9	SE	--	---	--	4	12	14	6.7	--
WASHINGTON																																
Olympia	190	1011.5	1019.0	70	43	56.5	-1.6	86	8	35	28+	0	0	49	78	1.21	-.59	.36	7	1	.0	0	5.5	NE	*21	WSW	19+	6	11	13	6.2	--
Seattle (U)	14	------	------	67	53	60.2	-.8	82	11	46	21	0	0	--	--	.99	-.57	.67	6		.0	0	----	---	29	SW	4	--	--	--	----	47
Seattle	14	1017.7	1018.8	--	--	----	----	--	--	--	--	--	--	51	76	----	----	----	--	--	---	--	5.7	NW	--	---	--	--	--	--	----	--
Seattle-Tacoma	386	1005.1	1019.3	67	50	58.0	-.7	82	11+	39	21	0	0	51	81	1.17	-.48	.61	7	1	.0	0	8.7	N	*25	SSW	4	8	8	14	6.2	--
Spokane	2357	948.5	1017.5	75	46	60.3	1.1	85	14+	32	21	0	1	39	49	.72	-.21	.51	5	2	.0	0	6.6	NE	34	SW	4	11	10	9	4.5	80
Stampede Pass(R)	3958	882.5	1020.4	60	44	51.9	.7	74	11	36	21+	0	0	--	--	2.51	-1.53	.81	9	1	.0	0	----	---	--	---	--	12	4	14	5.4	--
Tatoosh Island(R)	101	1015.9	1019.2	58	49	53.7	-.8	69	11	46	21+	0	0	49	85	3.33	-.31	1.02	6	0	.0	0	13.0	ENE	37	E	9+	11	6	13	5.7	63
Walla Walla (U)	949	980.7	1016.3	79	54	66.3	1.0	90	18+	43	22+	2	0	--	--	.79	-.07	.67	5	3	.0	0	4.5	Φ S	22	W	3	18	6	6	3.4	81
Yakima	1061	978.7	1017.6	79	42	60.6	-.5	92	12	33	22	2	0	40	52	.11	-.28	.11	1	2	.0	0	7.2	WNW	*30	SSW	4	16	6	8	3.9	--
WEST INDIES																																
San Juan, P.R.(U)	47	------	------	86	75	80.5	.0	90	15+	71	6	2	0	--	--	10.63	4.63	2.47	15	10	.0	0	----	---	--	---	--	--	--	--	----	--
San Juan, P.R.	15	1011.0	1013.9	88	73	80.3	.0	92	30	69	15+	7	0	72	81	8.34	.90	1.88	18	8	.0	0	8.9	ENE	31	SE	14	1	13	16	7.2	34
Swan Island	33	1010.0	------	88	78	82.9	.2	90	27+	72	1	7	0	--	--	3.88	-2.20	1.22	14	4	.0	0	----	---	--	---	--	8	18	4	4.7	--

See footnotes at end of table

CLIMATOLOGICAL DATA

SEPTEMBER 1960

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft	Mb.	Mb.	°F	°F.	°F.	°F.	°F.		°F				°F	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
WEST VIRGINIA																																
Charleston	950	982.7	1018.0	80	60	69.8	1.2	92	5	48	26+	3	0	62	80	1.82	-1.12	-0.83	7	2	0.0	0	4.1	ESE	*17	WSW	13	6	11	13	6.7	--
Huntington (U)	567	------	------	81	60	70.5	.0	94	5+	48	14	7	0	--	--	2.42	-.46	1.35	6	--	.0	0	----	---	--	---	--	--	--	--	----	--
Parkersburg (U)	615	------	------	80	59	69.9	1.5	93	4	46	14	6	0	--	--	1.80	-1.19	.88	4	0	.0	0	4.6	---	20	NW	30	10	7	13	5.7	52
WISCONSIN																																
Green Bay	689	995.3	1018.2	71	51	60.7	.5	92	7	36	30	3	0	55	83	3.09	.22	1.17	14	5	.0	0	9.4	SW	40	N	1	8	10	12	6.0	44
La Crosse	652	993.2	1017.7	73	55	64.1	1.8	94	3	42	30+	7	0	57	80	4.47	.65	1.43	8	1	.0	0	8.0	S	*23	NW	8	14	3	13	5.5	--
Madison	857	982.7	1017.9	74	54	64.3	2.2	94	7	39	28	5	0	57	79	3.90	-.09	2.24	8	5	.0	0	7.7	S	33	SW	24	10	7	13	5.6	61
Milwaukee	672	993.6	1018.7	72	54	63.4	.8	93	7	36	30	4	0	57	83	3.25	-.08	1.63	9	5	.0	0	9.2	SW	34	N	1	10	7	13	5.6	59
WYOMING																																
Casper	5319	840.5	1015.9	75	47	60.7	2.6	93	4	36	30+	3	0	35	43	.41	-.81	.15	7	4	.0	0	11.3	WSW	*35	N	21+	14	11	5	4.0	--
Cheyenne	6131	815.8	1016.6	76	47	61.2	3.8	93	4+	35	30	5	0	36	47	.66	-.54	.17	8	9	T	0	11.8	WNW	46	NW	13	14	10	6	4.4	72
Lander	5563	838.5	1016.5	75	47	60.9	3.4	91	4+	34	23	2	0	37	46	1.05	-.18	.52	6	4	.0	0	6.7	⌽SW	36	SW	6	15	8	7	4.2	74
Sheridan	3942	887.2	1012.8	75	45	60.1	2.2	98	4	30	30	5	1	37	48	.27	-1.18	.17	4	1	.0	0	6.8	NW	40	W	23	14	9	7	4.4	72

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

⌽ Wind direction to 8 compass points only.

¢ City Office Data.

† Airport Data.

‡ Peak Gust.

HEATING DEGREE DAYS

(Base 65°F.)

SEPTEMBER 1960

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	0	0	13
Huntsville	0	0	
Mobile	0	0	0
Montgomery	0	0	0
ALASKA			
Anchorage	530	1052	1040
Annette	362	817	836
Barrow	1208	3009	2641
Barter Island	1057	2772	2561
Bethel	672	1394	1298
Cold Bay	527	1358	1390
Cordova	521	1290	1233
Fairbanks	701	1124	1057
Juneau	466	1141	1134
King Salmon	559	1227	1160
Kotzebue	816	1544	1550
McGrath	721	1281	1193
Nome	789	1555	1660
St. Paul	636	1765	1710
Shemya	481	1466	
Yakutat	490	1212	1257
ARIZONA			
Flagstaff	156	218	370
Phoenix (U)	0	0	0
Phoenix	0	0	0
Prescott	4	4	34
Tucson	0	0	0
Winslow	3	3	20
Yuma	0	0	0
ARKANSAS			
Ft. Smith	0	0	9
Little Rock	0	0	10
Texarkana	0	0	0
CALIFORNIA			
Bakersfield	0	0	0
Bishop	3	4	55
Blue Canyon	32	83	182
Burbank	0	0	11
Eureka (U)	336	954	779
Fresno	0	0	0
Long Beach	0	0	
Los Angeles (U)	0	0	17
Los Angeles	0	4	109
Mt. Shasta (R)	46	113	248
Oakland	77	203	237
Point Arguello (R)	187	617	
Red Bluff	0	0	0
Sacramento (U)	3	3	17
Sacramento	0	0	22
Sandberg (R)	16	24	26
San Diego	0	0	42
San Francisco (U)	170	595	476
San Francisco	94	262	381
San Jose (U)	1	7	44
Santa Maria	104	327	303
COLORADO			
Alamosa	254	351	494
Colorado Springs	116	163	153
Denver	90	110	136
Grand Junction	17	21	36
Pueblo	41	47	74
CONNECTICUT			
Bridgeport	66	66	66
Hartford	130	147	115
Middletown	140	155	
New Haven	103	108	111
DELAWARE			
Wilmington	18	18	47
DIST. OF COLUMBIA			
Washington (U)	6	6	32
Washington	7	7	37
FLORIDA			
Apalachicola (U)	0	0	0
Daytona Beach	0	0	0
Fort Myers	0	0	0
Jacksonville	0	0	0
Key West	0	0	0
Lakeland (U)	0	0	0
Miami	0	0	0
Miami Beach	0	0	0
Orlando	0	0	0
Pensacola (U)	0	0	0
Tallahassee	0	0	0
Tampa	0	0	0
West Palm Beach	0	0	0
GEORGIA			
Athens	7	7	5
Atlanta	5	5	8
Augusta	0	0	0
Columbus	0	0	0
Macon	0	0	0
Rome	8	8	8
Savannah	0	0	0
Thomasville (U)	0	0	0
IDAHO			
Boise	63	130	135
Idaho Falls 46W (R)	186	310	373
IDAHO (Cont'd.)			
Idaho Falls 42NW (R)	200	312	417
Lewiston	71	128	133
Pocatello	93	176	183
ILLINOIS			
Cairo (U)	0	0	28
Chicago (Midway)	26	26	90
Chicago (O'Hare)	54	59	
Moline	55	58	104
Peoria	53	55	97
Rockford	89	96	
Springfield	13	13	89
INDIANA			
Evansville	6	6	59
Ft. Wayne	51	54	124
Indianapolis	28	28	79
South Bend	51	60	119
IOWA			
Burlington	45	45	83
Des Moines	82	82	116
Dubuque	112	129	185
Sioux City	96	96	153
Waterloo	130	138	169
KANSAS			
Concordia (U)	28	28	55
Dodge City	34	34	40
Goodland	91	98	95
Topeka	31	31	67
Wichita	13	13	32
KENTUCKY			
Lexington	6	6	56
Louisville	10	10	51
LOUISIANA			
Alexandria	0	0	
Baton Rouge	0	0	0
Lake Charles	0	0	0
New Orleans (U)	0	0	0
New Orleans	0	0	0
Shreveport	0	0	0
MAINE			
Caribou	292	459	572
Greenville (U)	312	456	
Portland	211	266	270
MARYLAND			
Baltimore (U)	4	4	29
Baltimore	18	18	50
Frederick	40	40	47
MASSACHUSETTS			
Blue Hill Obs. (R)	153	181	
Boston	103	108	84
Nantucket	106	134	167
Pittsfield	190	299	301
Worcester	186	236	
MICHIGAN			
Alpena	289	497	350
Detroit (City AP)	53	57	104
Detroit (Metropolitan AP)	59	67	
Detroit (Willow Run)	48	51	106
Escanaba (U)	219	327	404
Flint	128	179	188
Grand Rapids	90	110	187
Lansing	112	151	
Marquette (U)	243	396	392
Muskegon	113	143	226
S. Ste. Marie	276	461	533
MINNESOTA			
Duluth	299	426	445
Internat. Falls	366	498	544
Minneapolis	202	221	182
Rochester	203	244	244
St. Cloud	242	271	310
MISSISSIPPI			
Jackson	0	0	0
Meridian	0	0	0
Vicksburg (U)	0	0	0
MISSOURI			
Columbia	11	11	68
Kansas City	12	12	44
St. Joseph	44	44	54
St. Louis (RFC)	5	5	38
St. Louis	7	7	45
Springfield	13	13	69
MONTANA			
Billings	150	188	222
Butte	387	680	739
Glasgow	207	253	288
Great Falls	187	276	347
Havre (U)	208	260	328
Helena	242	363	422
Kalispell	307	471	456
Miles City	156	180	204
Missoula	256	300	371
NEBRASKA			
Grand Island	90	90	90
Lincoln (U)	55	55	86
Norfolk	118	118	139
North Platte	124	128	138
Omaha	63	63	93
Omaha N. Omaha AP	90	90	
Scottsbluff	145	166	137
Valentine	179	188	166
NEVADA			
Elko	130	232	263
Ely	137	222	294
Las Vegas	0	0	0
Reno	127	210	253
Tonopah	13	23	101
Winnemucca	109	190	197
NEW HAMPSHIRE			
Concord	180	210	260
Mt. Washington Obs. (R)	614	1694	
NEW JERSEY			
Atlantic City	20	20	
Atlantic City (U)	16	16	29
Newark	14	14	47
Trenton (U)	31	31	55
NEW MEXICO			
Albuquerque	3	3	10
Clayton	63	63	68
Raton	103	130	201
Roswell	10	10	8
Silver City	0	0	
NEW YORK			
Albany	100	123	163
Binghamton	114	162	271
Buffalo	77	103	168
New York (U)	20	20	39
New York	11	11	28
Rochester	83	129	176
Schenectady	83	96	156
Syracuse	83	106	146
NORTH CAROLINA			
Asheville (U)	32	32	50
Cape Hatteras (R)	0	0	0
Charlotte	4	4	7
Greensboro	21	21	29
Raleigh	11	11	16
Wilmington	0	0	0
Winston-Salem	15	15	28
NORTH DAKOTA			
Bismarck	228	248	293
Devils Lake (U)	230	289	384
Fargo	223	255	281
Grand Forks CAA	246	305	
Pembina	184	240	
Williston (U)	209	245	332
OHIO			
Akron	49	64	100
Cincinnati (U)	4	4	42
Cincinnati	18	18	83
Cincinnati Obs.	14	14	56
Cleveland	67	112	85
Columbus	33	34	77
Columbus (U)	26	26	59
Dayton	28	29	79
Mansfield	60	75	
Sandusky (U)	22	23	66
Toledo	64	71	114
Youngstown	60	86	102
OKLAHOMA			
Oklahoma City	2	2	14
Tulsa	0	0	18
OREGON			
Astoria	235	568	395
Burns (U)	152	297	266
Eugene	117	222	211
Meacham	257	520	484
Medford	39	74	77
Pendleton	72	115	104
Portland (U)	83	140	112
Portland	114	184	163
Roseburg	70	121	178
Salem	106	197	157
Sexton Summit (R)	155	399	326
PENNSYLVANIA			
Allentown	55	55	98
Erie	49	80	145
Harrisburg	23	23	69
Philadelphia (U)	2	2	33
Philadelphia	25	25	47
Pittsburgh (U)	18	18	56
Pittsburgh	47	62	114
Reading (U)	24	24	62
Scranton	92	104	133
Williamsport	60	66	117
RHODE ISLAND			
Block Island	79	86	115
RHODE ISLAND (Cont'd.)			
Providence	117	125	133
SOUTH CAROLINA			
Charleston (U)	0	0	0
Charleston	0	0	0
Columbia	0	0	0
Florence	0	0	0
Greenville	3	3	10
Spartanburg	8	8	7
SOUTH DAKOTA			
Huron	220	225	175
Pierre	149	151	
Rapid City	154	167	249
Sioux Falls	173	178	192
TENNESSEE			
Bristol	8	8	58
Chattanooga	6	6	24
Knoxville	3	3	33
Memphis (U)	0	0	13
Memphis	0	0	17
Nashville	0	0	22
Oak Ridge (U)	4	4	40
TEXAS			
Abilene	3	3	5
Amarillo	27	30	37
Austin	0	0	0
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	0	0	0
Del Rio (U)	0	0	
El Paso	0	0	0
Ft. Worth	0	0	0
Galveston (U)	0	0	0
Houston (U)	0	0	0
Houston	0	0	0
Laredo	0	0	0
Lubbock	8	8	23
Midland	2	2	0
Port Arthur	0	0	0
San Angelo	0	0	0
San Antonio	0	0	0
Victoria	0	0	0
Waco	0	0	0
Wichita Falls	1	1	5
UTAH			
Milford	31	45	114
Salt Lake City	16	35	88
Wendover	5	23	
VERMONT			
Burlington	195	278	238
VIRGINIA			
Lynchburg	29	29	49
Norfolk	0	0	0
Richmond	24	24	33
Roanoke	19	19	50
WASHINGTON			
Olympia	251	450	381
Seattle (U)	146	271	228
Seattle			265
Seattle-Tacoma	210	377	337
Spokane	153	253	250
Stampede Pass (R)	387	997	925
Tatoosh Island (R)	330	913	898
Walla Walla	55	91	
Walla Walla (U)	41	67	93
Yakima	145	236	157
WEST VIRGINIA			
Charleston	16	16	60
Huntington (U)	8	8	35
Parkersburg (U)	14	14	56
WISCONSIN			
Green Bay	197	268	273
La Crosse	148	162	183
Madison	134	180	194
Milwaukee	142	202	186
WYOMING			
Casper	185	257	268
Cheyenne	176	238	313
Lander	164	226	274
Sheridan	205	261	307

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

NORTH ATLANTIC TROPICAL CYCLONES

SEPTEMBER 1960

Compiled by George W. Cry

Marine Area Section, Office of Climatology

Three tropical cyclones were tracked in the North Atlantic during September. Hurricane Donna, a major storm, developed late in August off the west coast of Africa, and during the first 2 weeks of September severely affected portions of the West Indies and the east coast of the United States. Hurricane Ethel formed rapidly in the central Gulf of Mexico at midmonth, but diminished in intensity before striking the central Gulf Coast States. Tropical storm Florence developed, also in midmonth, north of Puerto Rico and moved westward into the southern Bahamas where it diminished to a weak tropical depression. This circulation drifted erratically over Cuba, Florida, and the eastern Gulf of Mexico for several days with locally heavy rains as its major feature. The tracks of these tropical cyclones are shown on page 389.

HURRICANE DONNA

The passage of hurricane Donna along a sweeping 6,000-mile path from the southeastern Atlantic through the Lesser Antilles on September 4 and 5, over the southern Bahamas and across Florida on the 10th and 11th, and along the Atlantic coast and over the New England States on the 11th and 12th was the outstanding weather feature of the month and of the 1960 hurricane season.

Extensive damage was reported from several of the Leeward Islands and in the southern Bahamas, and torrential rainfall in Puerto Rico produced severe flash flooding and a large loss of life. Donna was the first major hurricane in Florida since the Miami storm of October 17-18, 1950. The intensity and destructive force of Donna's winds and tides in Florida were comparable to those in the more severe hurricanes of record there. The continuation of hurricane force winds in sections of both the Middle Atlantic States and New England was extremely rare. Although several tropical cyclones have affected Florida and the Middle Atlantic States, or the latter area and New England with hurricane intensity, no other recorded storm since 1886 has struck portions of all three areas with full hurricane force winds. Very severe storm damage occurred on the Middle Keys and the southwest Florida coast, severe damage was recorded over much of eastern North Carolina, Long Island and extreme southeastern New England, and moderate to light damage resulted in other areas along the entire eastern seaboard. Preliminary damage estimates totaled several hundred million dollars, and approximately 50 deaths in the United States and 117 in the Antilles have been directly or indirectly attributed to the storm. Fatalities and injuries caused by Donna were relatively low, considering the severity of the storm, and the extensive heavily populated areas affected, and many of the deaths were only indirect results of the storm. This is attributed to timely and accurate warnings, prompt and generally efficient action by public safety agencies, and the overall excellent cooperation of the public. Property and agricultural losses were extremely high in several areas.

PATH OF THE HURRICANE.--Donna developed in the extreme southeastern North Atlantic. This area is remote and little travelled, but several reports are available relating to the development. The first indications were high winds and heavy rain squalls which contributed to the crash of an Air France plane at Dakar, French West Africa. Later, a U. S. Air Force aircraft reported what appeared to be a tropical depression near 10°N., 24°W. at 2300 e.s.t., on August 29; and heavy intermittent rain was recorded at Praia in the Cape Verde Islands on the 30th. The next indications of the westward movement of the storm system, near 14°N., 48°W., on the morning of September 2, were from ship reports in that region. U. S. Navy hurricane reconnaissance aircraft flew to the area later on the 2d and found a well-developed and intense hurricane with a central pressure of 28.73 inches and maximum surface winds estimated at 140 m.p.h. During the next 48 hours Donna moved west-northwestward around 17 m.p.h., with central pressures of 27.96 inches on the 3d and 28.11 inches early on the 4th and winds estimated at 150 to 160 m.p.h., near the storm center by Navy and Air Force reconnaissance. On the evening of the 4th the storm moved through the northern Leeward Islands with the eye passing directly over Barbuda, St. Barthelemy, Sint Maarten, and Auguilla and a short distance south of Anegada. Maximum winds ranged up to 140-160 m.p.h., in gusts in the Leewards. Continuing toward the west-northwest the storm center came within 35 miles north of St. Thomas, V. I., and some 85 miles north of San Juan, P.R., on the 5th. Although maximum winds were estimated near 125 m.p.h., on the 5th and 6th as the storm moved north of Puerto Rico, the area of maximum winds was small and only moderate speeds occurred on the Virgin Islands and Puerto Rico. High tides and heavy surf pounded the north and east coasts, however, and torrential rains developed on the night of the 5th, resulting in severe flash flooding in eastern Puerto Rico on the morning of the 6th after the storm center had moved away from the Island.

A change in the movement of the storm occurred on the 6th with a shift of direction to the west toward the north coast of Cuba. The forward motion also slowed to 14 m.p.h., and later to 8-10 m.p.h., with a concurrent drop of central pressure to near 27.80 inches and an increase of maximum surface winds to around 140 m.p.h., and later to 150 m.p.h. These features have been noted in several hurricanes in this area.

Donna moved into the southeastern Bahamas on the afternoon of the 7th, with the eye passing slightly north of Turks and Grand Caicos Islands, thence westward to the vicinity of Grand Ragged Island by the morning of the 8th. A progressively increasing turn to the west-northwest began during the afternoon and brought the storm center across Grand Bahama Bank well south of Andros Island to a position near 24°N., 80°W. by 7 p.m., e.s.t., on the 9th, thence over the middle Florida Keys between 2 and 3 a.m., e.s.t., on the 10th. Recorded wind gusts were 135 to 150 m.p.h. in that area. Reliable estimates of maximum sustained winds around 140 m.p.h., with gusts of 175 to

180 m. p. h., have been made. On the Keys the central eye extended from just north and east of Marathon shores to Lignumvitae Key.

Still moving about 10 m. p. h., the eye touched Cape Sable and passed a short distance offshore along the extreme southwest Florida coast, reaching the coast again just south of Naples. It passed over that city between noon and 1 p. m., e. s. t., on the 10th, moving almost due north, and over Ft. Myers about 2 1/2 hours later. With gradually increasing forward speed, the center slowly recurved to the north-northeast through central Florida, passing slightly west of Wauchula, over Bartow and Lakeland, between Clermont and Orlando, and west of Deland, reaching the east coast a short distance north of Daytona Beach in the Flagler Beach area, where partially clear skies and near calm winds lasted for almost 2 hours, beginning about 5:15 a. m., e. s. t., on the 11th. A decrease of maximum winds occurred over Florida, but sustained winds of near-hurricane force and gusts near 100 m. p. h., were felt near the center throughout central and northeastern sections of the State.

The overall organization of the storm remained intact although an apparent distortion or expansion of the central eye area began over Florida and continued as the storm center moved north-northeastward at an accelerating rate off the Georgia and South Carolina coasts during the 11th. Some intensification occurred, as evidenced by central pressure readings from reconnaissance aircraft of 28. 59 inches around noon and 28. 29 inches around 8 p. m., e. s. t., and an increase of maximum surface winds to near 115 m. p. h. The forward speed also increased to about 25 m. p. h. The eye, now broad and diffuse, moved inland again along the southwestern coast of North Carolina, between 9 and 11 p. m., e. s. t. The central region was marked by calm or variable winds, little or no rain, and thin or broken clouds over an area up to 50 to 80 miles in diameter, extending from extreme northeastern South Carolina to near Morehead City. The storm center moved in approximately a straight line over Swansboro, New Bern, Belhaven, and Elizabeth City then back over the ocean near the North Carolina - Virginia border around 5 a. m., e. s. t., September 12. Periods of lull ranging from 1/2 to 2 hours were reported from many points, and winds of less than 20 m. p. h., were reported simultaneously for some time from New Bern and Cherry Point, 20 miles apart, and from Washington and Belhaven, 25 miles apart. Unusually beautiful moonlight was noted in the eye at several places. Wind gusts of 100 m. p. h., or slightly higher, were estimated along the south coast, and sustained winds ranged up to 83 m. p. h., at Elizabeth City in the northeast.

The large eye (possibly the largest of record) was a continuing feature as Donna moved rapidly northeastward, paralleling the Middle Atlantic coast, at some 35 to 40 m. p. h., during the morning hours of the 12th. The western edge brushed the coast from the Delmarva Peninsula to the New York City area. Several coastal stations reported periods of near-calm winds and broken clouds while others had a slackening of wind and rainfall at the time the center passed. The eye also apparently became elongated in an east-west direction to a width of perhaps 100 miles, since practically all areas of Long Island had near-simultaneous "eye" conditions between about 1:30 and 2:30 p. m., e. s. t. The orientation of this large diffuse central area became extremely difficult to determine, and by the time the area of lowest pressure passed into Connecticut about 3 p. m., e. s. t., a well-defined eye was not in evidence. Light winds, thin clouds, or patches of clear sky were seen by observers as far west as central sections of Connecticut and Massachusetts and as far east as Cape Cod. The storm moved rapidly, at 40 to 45 m. p. h., through eastern Connecticut, central Massachusetts, southeastern New Hampshire and diagonally across central Maine, passing west of Caribou around midnight. Continuing rapidly northeastward, the storm passed over eastern sections of Canada and entered the Atlantic again off the coast of Newfoundland by the evening of the 13th.

Wind gusts of hurricane force, up to 100 m. p. h., in some places, were measured along the coast from the Hampton Roads area of Virginia and eastern Maryland to northeastern New Jersey, and were higher over some areas of eastern Long Island. Most areas of Connecticut experienced sustained winds of around 40 m. p. h., with gusts to 50 or 60 m. p. h., except in the extreme east where slightly higher gusts were recorded. In coastal Rhode Island and southeastern Massachusetts sustained winds ranged from 60 to 95 m. p. h., in exposed locations, with gusts as high as 130 m. p. h. The higher values were measured on Block Island, R. I. Over inland sections of New England maximum winds dropped to gusts of 50 to 60 m. p. h., near the storm track, while hurricane gusts extended northward in coastal sections as far north as the New Hampshire coast.

Outside influences on the movement and physical characteristics of Donna became progressively greater from Florida northeastward. An upper-level low pressure trough centered over the Appalachians and East Coast States and a diffuse cold front at the surface were the chief factors. The effects of polar air penetrating the hurricane circulation were slight at first. The highest winds in portions of the Carolinas and the Middle Atlantic States were from the northwest, however, in the sweep of slightly cooler and drier air into the region following passage of the storm center. In southern New England a marked distortion of the wind field appeared to be produced by increased surface friction over land and the intrusion of colder air into the southwest quadrant of the storm. The transition of Donna into a vigorous storm with extratropical features had been completed by the evening of the 12th.

A more detailed description of the effects of Donna in various areas follows. Charts or tables of meteorological data for stations in each region are included.

NORTH ATLANTIC TROPICAL CYCLONES

LESSER ANTILLES, PUERTO RICO, AND THE BAHAMAS

The major damage-producing feature of Donna in Puerto Rico and the Virgin Islands was not the usual winds or tides. Maximum sustained winds were only 38 m. p. h., at San Juan, and 52 m. p. h., at St. Thomas, and tides were only 3 to 5 feet above normal. Extremely high intensity rainfall over the eastern half of Puerto Rico on the night of September 5 resulted in severe and widespread flash floods on the morning of the 6th. Except in the vicinity of San Juan, almost all streams from the Rio Manati eastward overflowed, and some probably reached alltime high levels. Around 9 p. m., a. s. t., severe lightning and a very large (60 miles long) and intense radar precipitation echo was observed off the south and southeast coast. This area moved inland and up to 12 inches of rain fell in the eastern and southeastern mountains in 3 to 4 hours. By the next morning over 10 inches of rain had fallen in an area about 20 by 45 miles. At Cayey a 15. 65-inch total was measured, and some slightly larger totals fell on the northeastern slopes of the Luquillo Mountains. The Geological Survey of the U. S. Department of Interior reported that stream discharges on several streams were among the highest for basins of comparable size. The Rio de la Plata at Toa Alta rose 29. 1 feet (15 feet in 1 hour), and the Rio Grande de Loiza at Caguas rose 23. 8 feet (12 feet in 1 hour). Many houses which had been built by squatters on flood plains and river banks were swept away, and at Humacao, where residents had returned to their houses on the afternoon of the 5th as the storm center moved away from the Island, 90 persons were drowned or are unaccounted for. A landslide near Patillas also killed 8 persons, and fatalities were also reported at several other places, bringing the known loss of life to 107, with 136 injuries. Damage in Puerto Rico has been estimated at about $7. 5 million, with over $5 million to property, and over $2 million to agriculture.

Wind and tide damage was heavy in the Leeward Islands. A large percentage of the houses on Sint Maarten, Barbuda, and Anguilla were destroyed or severely damaged, with about $3. 25 million in property losses, and five fatalities on Anguilla. Two persons were electrocuted on Antigua, although damage there and on St. Kitts was slight. Major damage occurred on St. Barthelemy, and on Sombrero and Virgin Gordo damage was characterized as heavy to severe to property, crops, and livestock. Numerous inter-island schooners were sunk or beached at several islands.

As Donna approached the southeastern Bahamas, maximum winds were estimated up to 150 m. p. h. Mayaguana was buffetted for 13 hours by winds of hurricane force which reached over 100 m. p. h., at times. Heavy rain continued to accompany the storm in the Bahamas. Turks Island had received over 19 inches by shortly after the passage of the storm center. Damage on Turks and Caicos was estimated at $288, 000. Heavy rains on the southern fringes of the storm lashed at Hispanola and Jamaica. Three fatalities occurred at Port au Prince, Haiti. Gale winds and high tides lashed the north coast of Cuba from Havana eastward. High tides also pounded portions of the south coast, and floods destroyed about 80 houses at Gibard in Oriente Province.

FLORIDA

During September 9, winds gradually increased over the Keys and south Florida in squalls, with hurricane gusts during the afternoon at lightships just off the Keys. During the night the area of maximum winds touched the central Keys and extended along the southwest coast from Cape Sable to the Naples - Ft. Myers - Punta Gorda area on the 10th. At Sombrero Light, west of the area of strongest winds, the fastest recorded mile was at a rate of 128 m. p. h., at 1:30 a. m., e. s. t., on the 10th with gusts to 150 m. p. h. At Tavernier, to the east of the area of strongest winds, the fastest measured mile was 120 m. p. h., the limit of the anemometer. The indicator needle held solid against this maximum for at least 45 minutes. Anemometers were blown away or stations evacuated at Flamingo, Everglades, and Naples. Observers at these places estimated sustained winds were well in excess of 100 m. p. h., with gusts to 150 m. p. h., or slightly higher. At Everglades a 144 m. p. h., gust was measured. At Ft. Myers the sustained wind was 92 m. p. h., with gusts to 121 m. p. h., and on Captavia Island, west of Ft. Myers, estimates ranged up to 130 m. p. h. Gusts were estimated or measured at 100 m. p. h., or slightly higher just to the east of the storm track as far north as Polk County, and at 85 to 95 m. p. h., northeastward to the Daytona Beach - Flagler Beach area. Along the southeast coast from the greater Miami area southward sustained winds were generally 55 to 70 m. p. h., with gusts to 82 m. p. h., at the Miami Weather Bureau Office; to 89 m. p. h., at Homestead A. F. B.; and to 97 m. p. h., at the Miami Airport tower. Along the central west coast gusts ranged up to 75 m. p. h., at Tampa, and to near 100 m. p. h., in the Venice - Sarasota area.

The lowest atmospheric pressure measured by a calibrated aneroid barometer was 27. 55 inches on Conch Key as the eye passed. Several record low pressures were set, including 28. 08 inches at Ft. Myers, which surpassed 28. 14 inches in the September 1926 hurricane, and 28. 73 inches at Daytona Beach.

Heavy rainfall ranged up to 5 to 10 inches over most of the area from northern Broward County, Glades County, and northern Brevard County westward to a line from Duval County southwestward to Hillsborough and western Sarasota Counties, thence southward to the Keys. The heaviest rains apparently fell on the extreme southern Peninsula, but rain gauges were generally tipped over or blown away from Ft. Myers southward along the west coast. Reported totals in Dade County were mostly 7 to 10 inches with a few totals near 12 inches. Reported storm totals north of Ft. Myers were generally 5 to 7 inches, with some locally higher. These amounts, while not small, were relatively light when compared with some past storms. However, because of high antecedent water levels and stream flow due to rainfall of 6 to 10 inches over many sections in the 3 weeks prior to Donna, con-

TROPICAL CYCLONE DATA

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Maximum Winds M.P.H.	Gusts M.P.H.	Tide	Rain-fall	Remarks
WEST INDIES						
Barbuda, W.I.F.		NW 100		5	1.14	Damage $450,000. Severe property damage; 1 injury. Strong wind from N at 1000 a.s.t., very strong from NW at 1600 a.s.t., lull about 1700 for 15-20 minutes. Strong wind from SW 1800-2000 a.s.t. Destroyed: 3 boats, 33 houses. Tide in feet.
Sint Maarten, N.A.	28.11	SW 127	161	2	5.69	Damage $1.5 million. Eye hit, 70% houses destroyed or severely damaged in French and Dutch areas. All power and telephone lines down. No injuries. Evacuated from low-lying areas. Much damage to roads and bridges to airport. At Grande Anse, all houses destroyed except one. Phillipsburg inundated. Tide in meters.
Anguilla, W.I.F.						In eye 35-45 minutes, wind backed NE-N-NW-W over southern part of island and veered NE to SE over northern part where highest velocities were experienced. Damage $1.3 million. Five deaths, 17 severe injuries, 200 injured. Deaths due to flying metal blown from roofs and buildings. Sea water and spray killed 80 percent of agriculture. Houses destroyed, 374; badly damaged, 371; slightly damaged, 280. Schooners sunk, 13; beached, 1.
Antigua		60	69			Center estimated to have passed 30 miles to the north. Slight damage. Two deaths due to fallen electric lines.
La Desirade, F.A.	29.76	SSW 64				Slight damage.
St. Barthelemy, F.A. (Gustavia)	28.94	NNE 78 (est.)	102 (est.)			Barometer doubtful and winds estimated due to malfunction of instruments due to damage. Damage $159,200, all telephones and powerlines destroyed; houses unroofed, 20; severely damaged, 6; destroyed, 2; 1 hanger and 1 aircraft depot destroyed; cows and sheep killed; plantations suffered major damage; schooners destroyed or sunk, 4; blown ashore, 1. 4 injuries.
St. Kitts, W.I.F.		SSW 50	S 70			Slight damage.
Sombrero, W.I.F.						Severe damage to lighthouse being constructed.
Virgin Gordo, Brit. V.I.						Heavy damage to property, agriculture, and livestock. Schooners sunk, 3; blown ashore, 1.
Anegada, Brit. V.I.						Hurricane tides completely covered island. Severe damage to property; half of livestock killed, many homes destroyed; schooner sunk; 40 injuries.
Tortola, Brit. V.I.						No significant property damage.
St. Thomas, U.S. V.I.	29.61	WSW 52	WSW 60		5.58	Minor damage, 3 houses unroofed; 2 houses total loss; powerlines damaged.
St. Johns, U.S. V.I.	29.55	W 50	W 60		3.79	Minor damage.
St. Croix, U.S. V.I.	29.74	W 35	W 53		1.10	Minor damage.
San Juan WBAS	29.75	NW 38	W 42	4	2.22	Puerto Rico: Damages near $7 million to agriculture, livestock, roads, slum houses, and sugar. Highest floods on record in eastern sections of island.
San Juan WBO	29.74	WNW 32	WNW 42		2.82	107 persons killed or missing in floods and landslides. Tide in feet.
Cape San Juan Churn CGLS	29.59	38	NW 50	3-4	6.00	Over 12 inches of rain at Signal Corps Station nearby. Tide in feet.
Roosevelt Roads NAS		SSW 36	50		8.76	Unconfirmed tornadic winds at 0130 a.s.t., 6 Sept., gave gusts up to 76 m.p.h., at the control tower and severely damaged it. Overall damage slight.
San Juan NAS & NOB	29.74	SSW 16	34			
Hato Rey Churn	29.74	NW 31	NNW 50		2.73	
El Yunque		36	S 61		8.50	Elevation 3476 feet.
Turks and Caicos						Damage $288,000.

Many pressures are aneroid barometer readings. Maximum winds and gusts are estimates in many cases.
Tides above normal except where indicated.

siderable flooding resulted. Record high water levels were measured in parts of the coastal ridge between South Miami and Everglades National Park, and lake and stream overflow in the central peninsula forced evacuation of some homes. High water also closed many roads and inundated large areas of crop- and rangeland.

Precise measurements of the storm surge are now being made by the U. S. Army Corps of Engineers. Preliminary surveys indicated that tides reached at least 12 feet above mean low water at several points in the Keys and on the southwest coast. At Tavernier water reached about 18 inches below the level in the Labor Day hurricane of 1935. The Overseas Highway was covered by the storm tide at many places, and the road was washed out completely at several bridge approaches. The fresh water pipeline to the Keys was ruptured in at least five places.

Tides in the Everglades - Naples - Ft. Myers Beach area were estimated 4 to 7 feet above normal (slightly higher at places) and pushed into the towns, damaging streets, buildings, and docks. Beach erosion and deposition were extensive. Farther north on the west coast tides were progressively lower and below normal in some places at times as winds were offshore in advance of the storm center. North of Bradenton on the west coast and Palm Beach on the east coast maximum tides were mostly 1 to 3 feet above normal and in the Miami area were generally 2 to 4 feet above normal. Tidal flooding in these areas was not a significant feature in the overall damage.

Damage from wind and tide was extremely heavy on the Keys and the southwest coast, varying from almost complete destruction of all but the most substantial buildings in the area from Marathon to Tavernier to battered boats, docks, broken windows and water damage, and lost roofs in all but the western Keys. Extensive destruction of small houses and buildings and roof damage occurred northward to Punta Gorda. Outside these main damage areas, the wind blew over thousands of trees, shattered windows, blew off or damaged roofs and demolished many weak buildings. Wind-driven rain also added to the damage. Power and communications facilities were disrupted throughout central and south Florida.

Much of the extensive citrus area of central Florida was near the storm center. Trees were uprooted or blown over in unprotected locations, and the gusty winds split or denuded trees, and blew fruit off in large acreages. U. S. Department of Agriculture estimates indicated one-fourth to one-third of the grapefruit crop and about 5 to 10 percent of the orange crop was lost. Little fruit could be salvaged because of immaturity. Most avocados were blown off trees, which themselves took heavy damage. Truck crops were delayed or damaged.

Total damages in Florida have not been finalized, but appear to range at present between $200 million and $350 million, with a basic property damage total near $116 million.

Direct or indirect fatalities were relatively few and included: 7 from drowning, 4 from heart attacks, 1 in an auto accident, and 1 electrocution.

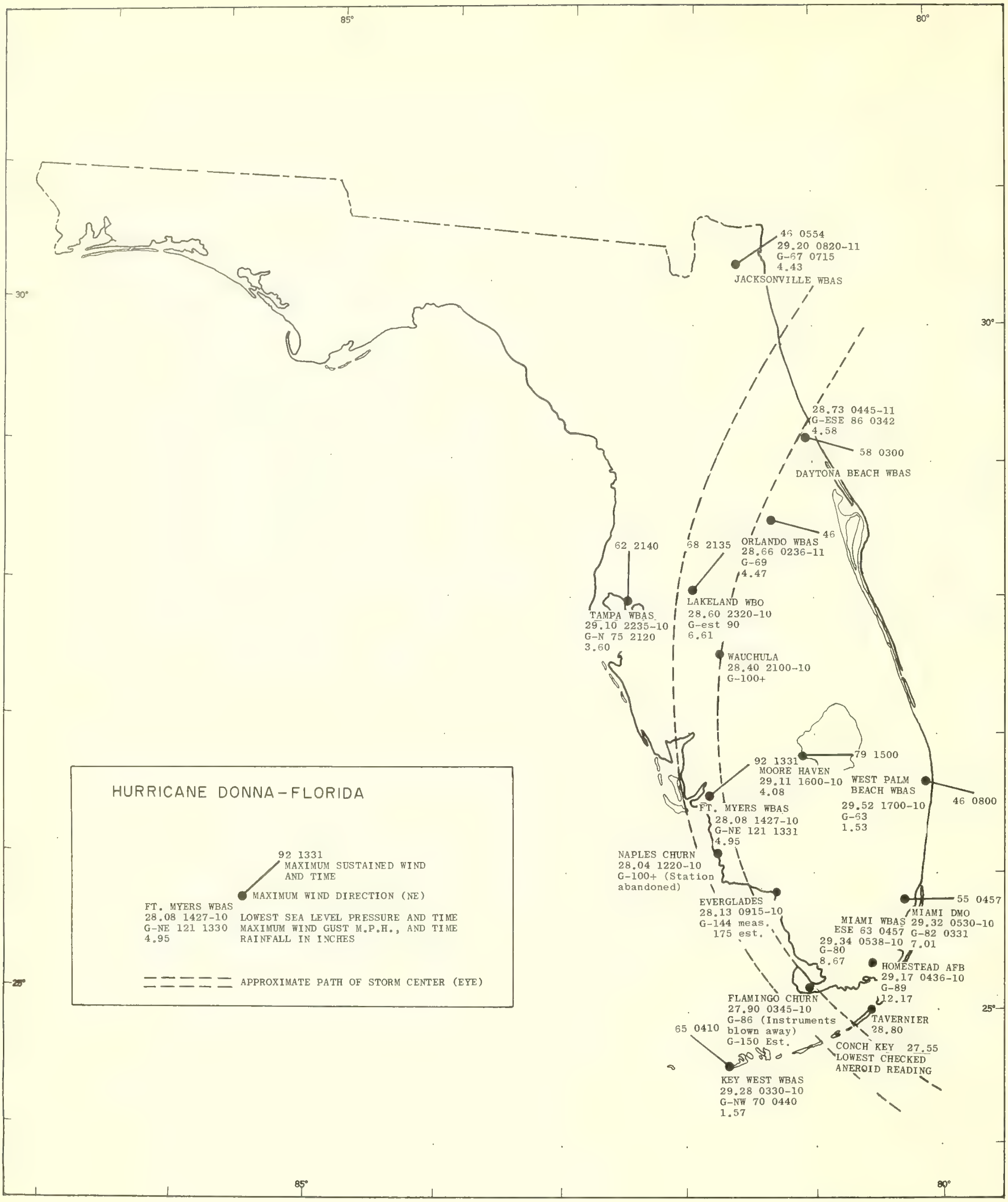
TROPICAL CYCLONE DATA

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Time	Wind				Tide * (feet)	Rainfall (inches)	Remarks
			Fastest Mile	Time	Gusts	Time			
Daytona Beach WBAS	28.73	0445-11	ESE 58	0300	ESE 86	0342	2	4.58	Record low pressure. Tides ocean front and Halifax River. Center of eye estimated about 15 miles to west at 0345. Gust FAA tower ESF 99 0342.
Ft. Myers	28.08	1427-10	NE 92[1]	1331	121	1331	Est. 4-7	4.95	Eye 1420-1531. Record low pressure.
Jacksonville WBAS	29.20	0820-11	NE 46	0554	67	0715	1.4-2.9	4.43	Damage mostly billboards, poles, wires, and trees. Tides on beaches.
Key West WBAS	29.28	0330-10	NW 65	0410	NW 70	0440	3	1.57	
Lakeland WBO	28.60	2320-10	NE 68	2135	est 90			6.61	
Miami DMO	29.32	0530-10	E 55	0457	82	0331	4.3 MLW	7.01	Damage light, trees, signs, some windows.
Miami WBAS	29.34	0538-10	ESE 63[1]	0457	80			8.67	Gust FAA tower 84 kt. 0815.
Orlando WBAS	28.66	0236-11	ESE 46[1]		69			4.47	Calm reported in western environs of city.
Tampa WBAS	29.10	2235-10	N 62[1]	2140	N 75	2120		3.60	
West Palm Beach WBAS	29.52	1700-10	ESE 46	0800	63		1.0	1.53	Minor damage.

1 One-minute wind speed.

* Tides in feet above normal, except where indicated. All times are Eastern Standard Time.


85°
80°
30°
30°
25°
25°
85°
80°
46 0554
29.20 0820-11
G-67 0715
4.43
JACKSONVILLE WBAS
28.73 0445-11
G-ESE 86 0342
4.58
58 0300
DAYTONA BEACH WBAS
46
ORLANDO WBAS
28.66 0236-11
G-69
4.47
62 2140
68 2135
LAKELAND WBO
28.60 2320-10
G-est 90
6.61
TAMPA WBAS
29.10 2235-10
G-N 75 2120
3.60
WAUCHULA
28.40 2100-10
G-100+
92 1331
MOORE HAVEN
29.11 1600-10
4.08
79 1500
WEST PALM BEACH WBAS
29.52 1700-10
G-63
1.53
46 0800
FT. MYERS WBAS
28.08 1427-10
G-NE 121 1331
4.95
NAPLES CHURN
28.04 1220-10
G-100+ (Station abandoned)
EVERGLADES
28.13 0915-10
G-144 meas.
175 est.
55 0457
MIAMI DMO
29.32 0530-10
G-82 0331
7.01
MIAMI WBAS
ESE 63 0457
29.34 0538-10
G-80
8.67
HOMESTEAD AFB
29.17 0436-10
G-89
12.17
FLAMINGO CHURN
27.90 0345-10
G-86 (Instruments blown away)
G-150 Est.
TAVERNIER
28.80
65 0410
CONCH KEY 27.55
LOWEST CHECKED ANEROID READING
KEY WEST WBAS
29.28 0330-10
G-NW 70 0440
1.57
HURRICANE DONNA-FLORIDA
92 1331
MAXIMUM SUSTAINED WIND AND TIME
MAXIMUM WIND DIRECTION (NE)
FT. MYERS WBAS
28.08 1427-10
G-NE 121 1330
4.95
LOWEST SEA LEVEL PRESSURE AND TIME
MAXIMUM WIND GUST M.P.H., AND TIME
RAINFALL IN INCHES
APPROXIMATE PATH OF STORM CENTER (EYE)

GEORGIA AND SOUTH CAROLINA

Georgia and South Carolina missed the full effects of Donna as the storm passed north-northeastward 50 to 80 miles offshore on the 11th. Sustained winds in Georgia were not above 35 m. p. h., with gusts to near 45 m. p. h., at coastal stations. Tides were not high enough to cause any major damage. Heavy rains fell along the coast with some totals near 4 inches, diminishing to near 2 inches about 40 to 50 miles inland. Little damage was noted in South Carolina from wind or tide. Sustained winds along the coast were 40 to 55 m. p. h. At the Custom House in Charleston the maximum was 57 m. p. h. Gusts ranged near 70 m. p. h., along much of the coast, and up to 100 m. p. h., at Ocean Beach Drive, in the extreme northeast. Some locally severe damage and several injuries occurred in South Carolina as a result of tornadoes in the western portion of the hurricane circulation. One tornado moved on an 8-mile westward path through Charleston between 2:00 and 2:30 p. m., e. s. t., and another passed over Garden City on the coast at 3:35 p. m., on the 11th. Total storm damage in South Carolina, including losses from the tornadoes, was estimated near $750, 000.

NORTH CAROLINA AND VIRGINIA

The broad, diffuse central eye of Donna was first noted in North Carolina at Cape Fear about 9 p. m., e. s. t., September 11. Lowest reported pressures ranged between 28. 30 and 28. 55 inches over eastern North Carolina. The sea level reading, 28. 41 inches, at Wilmington exceeded the previous record low, 28. 68 inches, measured during hurricane Hazel on October 15, 1954.

Maximum sustained winds ranged from 53 m. p. h., at Wilmington and 58 m. p. h., at New Bern, to 72 m. p. h., at Hatteras and 83 m. p. h., at Elizabeth City. Gusts were measured or estimated in excess of 100 m. p. h. at a number of places along the south and east coast and at 80 to 90 m. p. h., or slightly higher, along the path of the center.

Rainfall ranged from 4 to 7 inches from the south-central coast inland along the path of the eye and for some distance to the west. Amounts were smaller east of the track, decreasing to less than 2 inches at Hatteras.

Tides ranged up to 8 feet above normal, with 15-foot waves, along portions of the south coast, and generally 3 to 6 feet above normal in other areas of the Outer Banks and along the inland sounds.

Several tornadoes, embedded in the forward quadrant of the storm, occurred during the afternoon of the 11th. These caused some local damage near Clinton, around 5 p. m., e. s. t., and near Elizabethtown, around 2 p. m. Several persons were injured in the storm near Clinton.

Some wind damage was felt 50 or more miles inland, but heavy property damage was confined mostly to beach areas from Wilmington eastward, both on the Outer Banks and the inland sounds. Even in these exposed locations there was a selective damage pattern, ranging from light roof shingle damage to complete destruction of more than one-half of all buildings. Sections of most fishing piers were lost to the sea all along the coast. Damage in the Morehead City - Beaufort and the Nags Head - Manteo areas was characterized as generally worse than in any of the hurricanes of the 1950's. In inland areas and along the southwest coast, Hazel of 1954 was much more severe.

The greatest agricultural loss was to the ripe corn crop, which was badly blown down in most of eastern North Carolina. Some losses also were noted to forests and in quality of cotton, peanuts, and soybeans. Preliminary damage reports indicate property damage in North Carolina to beaches and cities along the immediate coast and sounds affected by tides and wind near $20 million; to crops and farm property also near $20 million; to forests near $15 million; to inland communities near $1 million, and to bridges and highways near $500, 000.

Eight storm-connected fatalities were reported in North Carolina, including 1 electrocution, 3 drownings, 2 crushed by falling trees, and 2 in a traffic accident. Approximately 100 injuries were severe enough to require hospital treatment.

The Hampton Roads region in Southeastern Virginia was just to the west of the eye as Donna moved off the coast again early on the morning of the 12th. Norfolk WBAS was in the extreme western portion of the eye between 5:15 and 5:50 a. m., e. s. t., and the wind during this time averaged only 19 m. p. h. Sustained winds reached 80 m. p. h., at Cape Henry and 73 m. p. h., at Norfolk, with gusts around 90 m. p. h., in the area.

Tides along the coast (above mean low water) included 5. 8 feet at Virginia Beach, at 3:50 a. m., e. s. t., 7. 3 feet at the Fleet Landing in Norfolk at 6:50 a. m., 9. 1 feet at Kiptopeake at 6:30 a. m., and 9. 4 feet at Onancock.

Rainfall was heaviest over the eastern counties and ranged from near 4 1/2 inches in the Norfolk area to around 3 inches in the Richmond and Washington, D. C., areas.

Extensive damage in the eastern third of Virginia was principally to trees, small craft, piers, and utility lines, with some structural damage at exposed locations.

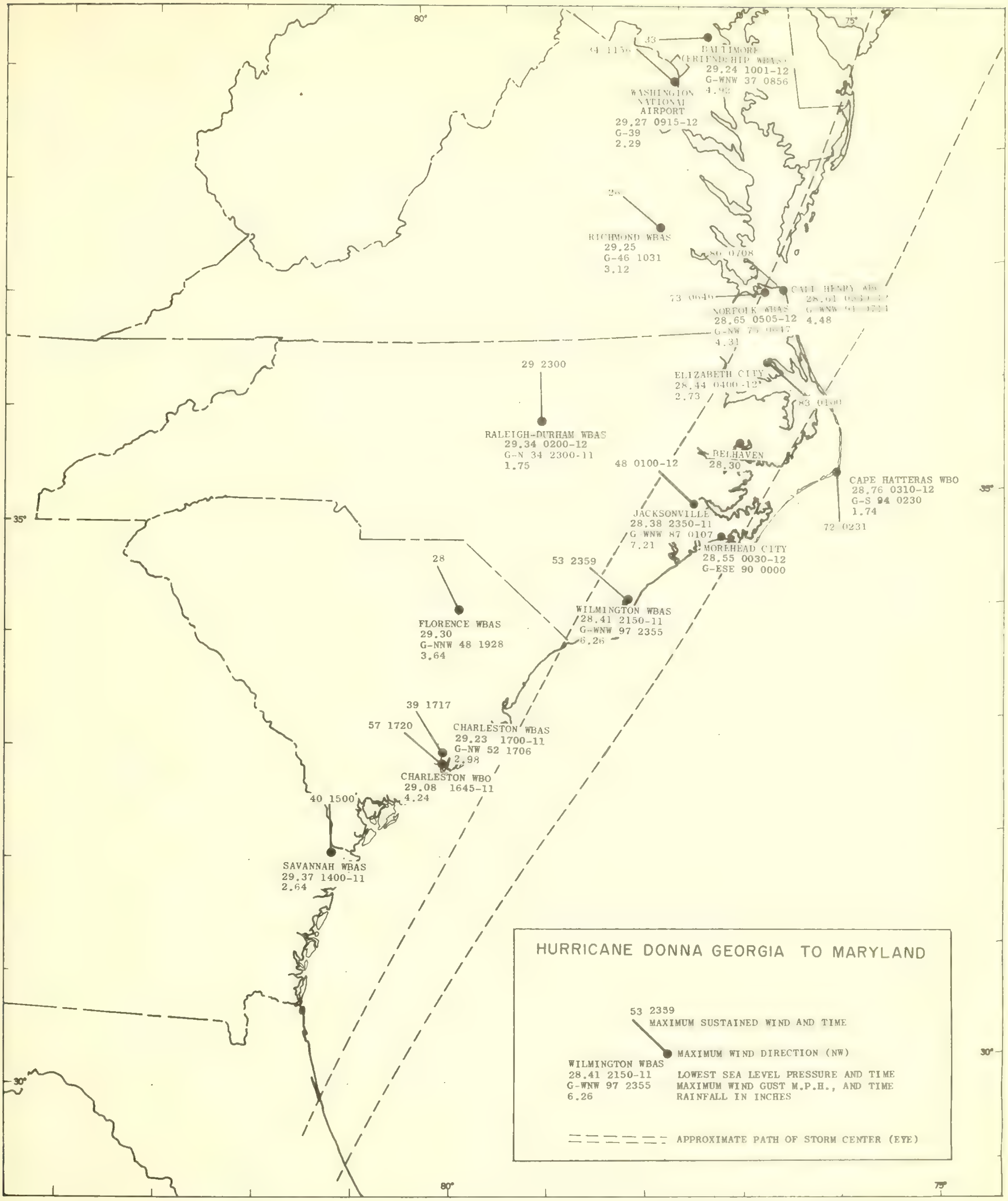
Three fatalities were reported in the Hampton Roads area: 2 drownings and 1 electrocution.

TROPICAL CYCLONE DATA

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Time	Wind				Tide * (feet)	Rainfall (inches)	Remarks
			Fastest Mile	Time	Gusts	Time			
GEORGIA									
Savannah WBAS	29.37	1400-11	N 40	1500				2.64	
SOUTH CAROLINA									
Charleston WBAS	29.23	1700-11	NNW 39[1]	1717	NW 52	1706	7.6 MLW	2.98	Tornado across Charleston about 1355 to 1410 from east to west. Ten injuries. Damage near $250,00.
Charleston WBO	29.08	1645-11	NW 57	1720				4.24	
Florence WBAS	29.30		NNW 28[1]		NNW 48	1928		3.64	
NORTH CAROLINA									
Cape Hatteras WBO	28.76	0310-12	S 72	0231	S 94	0230	3-4	1.74	Tides were low.
Raleigh-Durham WBAS	29.34	0200-12	N 29	2300 -11	N 34	2300-11		1.75	
Wilmington WBAS	28.41	2150-11	NW 53[1]	2359	WNW 97	2355	6-8	6.26	Record low pressure.
VIRGINIA									
Cape Henry WBO	28.61	0530-12	NW 80	0708	WNW 91	0714	3-4 MLW	4.48	Calm 0515-0547.
Norfolk WBAS	28.65	0505-12	W 73	0646	NW 75	0647		4.31	
Richmond WBAS	29.25		NW 26	0526	46	1031		3.12	
Washington National Airport	29.27	0915-12	NW 34	1156	39			2.29	

1 One-minute wind speed. * Tides in feet above normal, except where indicated. All times are Eastern Standard Time.


HURRICANE DONNA GEORGIA TO MARYLAND
53 2359
MAXIMUM SUSTAINED WIND AND TIME
MAXIMUM WIND DIRECTION (NW)
WILMINGTON WBAS
28.41 2150-11
G-WNW 97 2355
6.26
LOWEST SEA LEVEL PRESSURE AND TIME
MAXIMUM WIND GUST M.P.H., AND TIME
RAINFALL IN INCHES
APPROXIMATE PATH OF STORM CENTER (EYE)
80°
75°
35°
30°
33
34 1156
BALTIMORE
(FRIENDSHIP WBAS)
29.24 1001-12
G-WNW 37 0856
4.92
WASHINGTON
NATIONAL
AIRPORT
29.27 0915-12
G-39
2.29
26
RICHMOND WBAS
29.25
G-46 1031
3.12
86 0708
73 0646
CAPE HENRY WB
28.61
4.48
NORFOLK WBAS
28.65 0505-12
G-NW 0647
4.31
29 2300
RALEIGH-DURHAM WBAS
29.34 0200-12
G-N 34 2300-11
1.75
ELIZABETH CITY
28.44 0400-12
2.73
83 0100
BELHAVEN
28.30
48 0100-12
JACKSONVILLE
28.38 2350-11
G WNW 87 0107
7.21
CAPE HATTERAS WBO
28.76 0310-12
G-S 94 0230
1.74
72 0231
MOREHEAD CITY
28.55 0030-12
G-ESE 90 0000
53 2359
WILMINGTON WBAS
28.41 2150-11
G-WNW 97 2355
6.26
28
FLORENCE WBAS
29.30
G-NNW 48 1928
3.64
39 1717
57 1720
CHARLESTON WBAS
29.23 1700-11
G-NW 52 1706
2.98
CHARLESTON WBO
29.08 1645-11
4.24
40 1500
SAVANNAH WBAS
29.37 1400-11
2.64

MARYLAND, DELAWARE, PENNSYLVANIA, AND NEW JERSEY

The coastal region from Maryland through New Jersey was brushed by the western side of Donna during the morning and early afternoon of September 12. Sustained winds were 60 m. p. h., or higher, along most of the immediate coast, with gusts in several areas to 100 m. p. h., or slightly higher, as far north as southern New Jersey. At Ocean City, Md., 83 m. p. h., winds were recorded before the anemometer was rendered unserviceable.

Minimum pressures along the coast were in the 28.60- to 28.80- inch range, with a few below 28.50 in southern New Jersey.

Rainfall totals were generally 3 to 6 inches in coastal sections and as far as 100 miles inland, with local totals up to 8.29 inches at Denton, Md., and 8.42 inches at Seabrook, N. J.

Tides ranged up to 8.9 feet above mean low water (5.7 feet above normal) at Atlantic City, N. J., at 9:45 a. m., e. s. t., and a resurgence of the tide around 2 p. m., reached 8.0 feet, rising 7.1 feet in about 30 minutes. Tides were well above normal along the entire middle Atlantic coastline and on much of the eastern shore of Chesapeake Bay. Tidal flooding was not severe, although low places around Kent and Tilgham Islands were inundated.

Losses to property were greatest along the immediate shore, where wind and tide damage to boats, docks, boardwalks, cottages, and buildings was severe in some areas. Hardest hit was Ocean City, Md., where the storm was described by some old residents as the most severe in the City's history. Extensive minor property damage from wind, rain, and small stream overflow throughout inland sections was considerable in the aggregate. Trees or tree limbs falling on lines disrupted power and communications. Additional wind damage was chiefly to small structures, windows and roofs, and signs.

Most small streams overflowed with some reaching record or near-record levels. Damage was widespread around Baltimore, along Chesapeake Bay, on the Delmarva Peninsula, in the lower Delaware Basin, southeastern Pennsylvania, and portions of New Jersey.

Agricultural damages were heavy, particularly to the apple crop which was nearing harvest. About one-third of the New Jersey crop was lost, and considerable damage occurred to apple and peach trees. Other agricultural damage was to corn, soybeans, sorghum, and grass in reduced quality and blowdown which hampered harvest.

Two fatalities - 1 electrocution and 1 heart attack - were reported in Maryland. One drowning occurred in southeastern Pennsylvania. Nine fatalities were attributed to Donna in New Jersey: 1 electrocution, 1 drowning, 2 heart attacks, and 5 in auto accidents where weather was a factor.

NEW YORK AND NEW ENGLAND

Moderate to heavy rain and slowly increasing winds during the night of the 11th and the morning of the 12th were the forerunners of Donna in the New York - New England area. The large, diffuse storm center passed over Long Island during the early afternoon, with areas of lull over practically all the Island, and into Connecticut and Rhode Island, where it became extremely ill-defined. A wide area of Long Island and the southern New England coast had lowest pressures which were approximately the same. The minimum sea level pressure in the Northeast was 28.38 inches at Brookhaven on Long Island. New York City WBO recorded 28.68 inches, while pressures from Bridgeport, Conn., to Block Island, R. I., were in the 28.55- to 28.60-inch range.

The area of lowest pressure became more restricted and the minimum pressure rose somewhat over inland sections of New England, passing from northeastern Connecticut to southeastern New Hampshire, where relatively light winds were noted between Concord and Windham between 6:30 and 7:30 p. m., e. s. t., and diagonally across Maine, where it passed out of the country around midnight on the 12th.

Sustained winds reached 100 m. p. h., or higher at several points on Long Island, up to 60 to 70 m. p. h., on western Long Island and in New York City, 35 to 45 m. p. h., in western Connecticut and eastern New York State. On Block Island the fastest sustained wind was 95 m. p. h. At Montauk Point the anemometer registered 100 m. p. h. before blowing away. Over extreme southeastern Massachusetts maximum winds were near 100 m. p. h., while farther north to the Maine coast they were generally 50 to 60 m. p. h. Gusts reached 82 m. p. h., at the Battery in New York City, around 125 m. p. h., on eastern Long Island, and 130 m. p. h., at Block Island, R. I. Gusts up to 75 m. p. h., were reported in northeastern Connecticut; 80 to 100 m. p. h., over Rhode Island and most of coastal Massachusetts; and around 50 to 60 m. p. h., in scattered inland sections of New England and eastern New York.

Torrential downpours in New York totaled 4 to over 8 inches from the middle Catskill area into the Lower Hudson Valley and over southcentral Long Island. In New England rainfall totaled 3 to 6 inches, with a few local amounts over 7 inches, generally west of the storm track from southwestern Maine into western Rhode Island. The heavy rains, especially in the Catskills, caused severe small stream flooding which reached record levels at some points. A 10-foot wall of water swept through Windham with destructive results. Elsewhere from the Catskills to sections of Long Island flooding was severe. Inland flooding generally failed to be of consequence in New England.

Tides reached record heights at several points in the New York City - Long Island area and were up to 6 feet above normal at places, reaching 8.2 feet above mean sea level at the Battery (6.1 feet above normal). Tides were 5 to 10 feet above normal along the southern New England coast but came generally at the time of normal low tide, so that tide and wind action were not severe. Along the eastern New England coast tides were not unusually high, but persisted for about 2 hours after the time of normal high tide along the Maine coast.

Damages in the heavily populated Northeastern States were heavy. Unprecedented flood damage occurred in the Catskill area. The loss at Windham alone was estimated at more than $1 million. Damage to all types of boats, docks, highways, and bridges on Long Island was very heavy from flooding, high tides, and heavy seas. Nassau and Suffolk Counties reported heavy losses. Many thousands of trees and limbs were blown down by high winds in the Long Island - lower Hudson Valley area, disrupting power, communications, and travel. Tide damage from coastal erosion and flooding was extensive.

Most damage in Connecticut was to small boats and coastal erosion, while in Rhode Island damage was more extensive. Docks and over 200 boats were severely damaged or destroyed along the Narranganset Bay.

Wind damage in New England was mainly to the east of the storm track and was limited in most areas to damage to roofs, chimneys, and windows. Most damage was from falling trees and tree limbs which brought down utility lines and damaged buildings and automobiles.

Agricultural damages were heavy in many sections. Soil erosion and flooding occurred mainly to the west of the storm track. Much corn was blown down, but again apples bore the brunt of crop damages. In New York one-third of the McIntosh apples were blown off, and heavy losses were also sustained in Rhode Island and sections of Massachusetts. No total damage figures are available for New York and New England (preliminary estimates of property and crop damage were over $12. 5 million for New England). Indications, however, are that Donna will be the most costly storm in New York since the September 1938 hurricane.

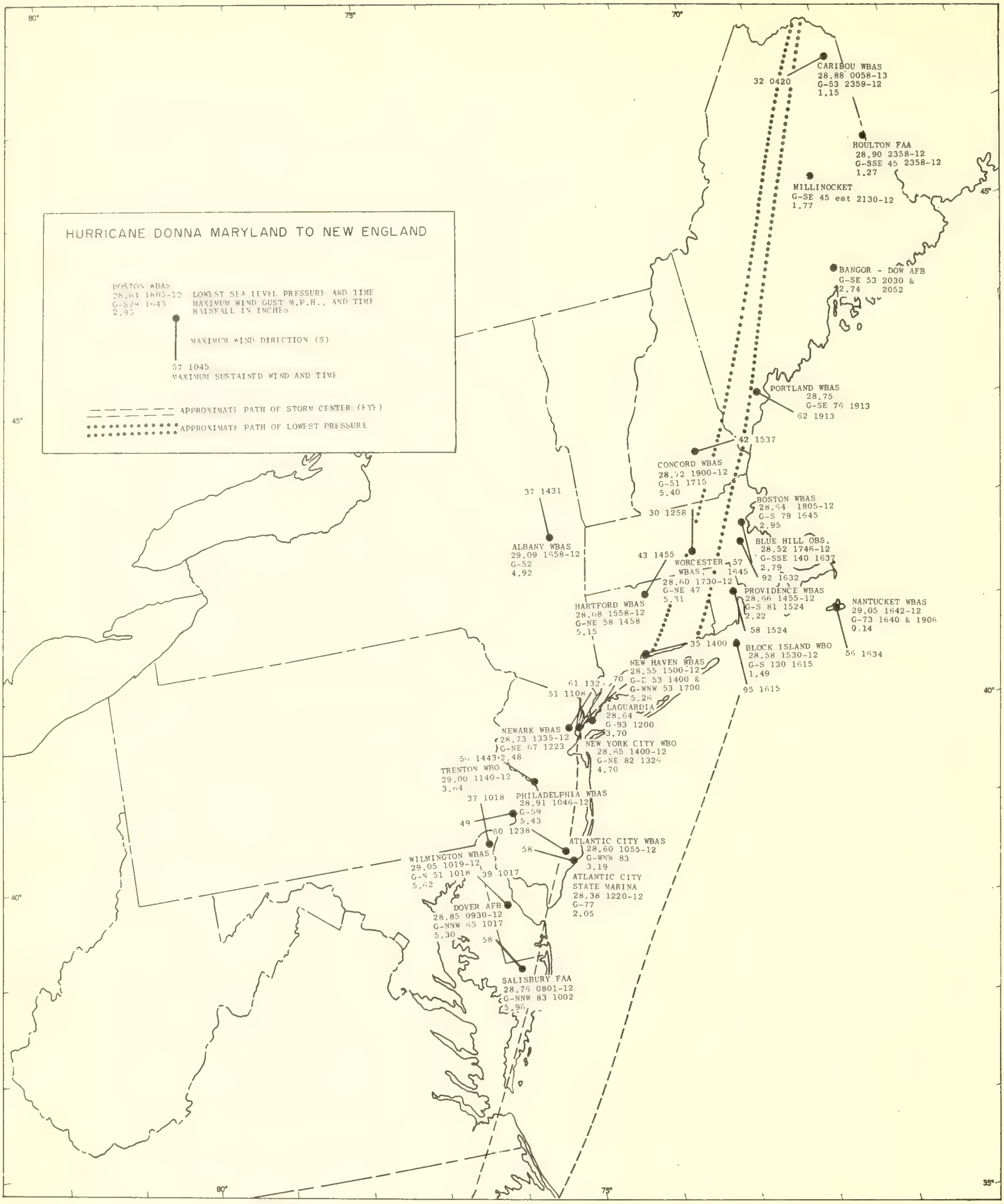
Three fatalities in New York, 2 drownings and 1 due to a falling tree, and three in New England, 1 drowning, 1 electrocution, and 1 due to a falling tree (all in Massachusetts) have been directly attributed to Donna. In addition, 1 person was killed by a fall while cleaning up debris, 3 suffered fatal heart attacks, and 1 died in an automobile accident, all in Massachusetts, and automobile accidents claimed 1 each in New Hampshire and Vermont.

TROPICAL CYCLONE DATA

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Time	Wind				Tide * (feet)	Rainfall (inches)	Remarks
			Fastest Mile	Time	Gusts	Time			
MARYLAND									
Baltimore WBAS	29.24	1001-12	W 33		WNW 37	0856		4.92	
DELAWARE									
Dover AFB	28.85	0930-12	NNW 39	1017	NNW 65	1017		5.30	
Wilmington WBAS	29.05	1019-12	N 37[1]	1018	N 51	1018		5.62	
PENNSYLVANIA									
Philadelphia WBAS	28.91	1046-12	W 49		59			5.43	
NEW JERSEY									
Atlantic City WBAS	28.60	1055-12	NW 60[1]	1238	WNW 83		8.9 MLW	3.19	
Atlantic City State Marina	28.38	1220-12	WNW 58[1]		77			2.05	
Newark WBAS	28.73	1335-12	NE 51[1]	1108	NE 67	1223		2.48	Pressure is record minimum (1945-1960) and maximum wind is record for September (1946-1960).
Trenton WBO	29.00	1140-12	NW 56	1443				3.64	Wind is record for September.
NEW YORK									
New York City WBO	28.65	1400-12	NE 61	1326	NE 82	1326	8.2 MSL	4.70	Highest tide in many years.
New York City La Guardia	28.64		NE 70		93	1200		3.70	
Albany	29.09	1658-12	N 37	1431	52			4.92	
CONNECTICUT									
Hartford WBAS	28.68	1558-12	NE 43	1455	NE 58	1458		5.15	
New Haven	28.55	1500-12	E 35	1400	E 53 WNW 53	1400 1700	11.0 MSL	5.26	
RHODE ISLAND									
Block Island WBO	28.58	1530-12	S 95[1]	1615	S 130	1615		1.49	
Providence WBAS	28.66	1455-12	S 58[1]	1524	S 81	1524		2.22	
MASSACHUSETTS									
Blue Hill Observatory	28.52	1746-12	SSE 92	1632	SSE 140	1637		2.79	3d lowest pressure, 2d fastest mile, 2d highest gust of a 76-year record. Extreme gust aided by a steep southern slope which increases the wind velocity.
Boston WBAS	28.64	1805-12	S 57	1645	S 79	1645		2.95	
Nantucket	29.05	1642-12	S 56	1634	73	1640 & 1906	5.3 MLW	0.14	
Worcester	28.60	1730-12	NNE 30	1258	NE 47			5.31	Calm from about 1645 to 1815.
NEW HAMPSHIRE									
Concord	28.72	1900-12	E 42	1537	51	1715		5.40	
MAINE									
Caribou	28.88	0058-13	WSW 32[1]	0420	53	2359 -12		1.15	
Portland	28.75		SE 62	1913	SE 76	1913			

[1] One-minute wind speed. * Tides in feet above normal, except where indicated. All times are Eastern Standard Time.


HURRICANE DONNA MARYLAND TO NEW ENGLAND
BOSTON WBAS
28.64 1805-12 LOWEST SEA LEVEL PRESSURE AND TIME
G-S79 1645 MAXIMUM WIND GUST M.P.H., AND TIME
2.95 RAINFALL IN INCHES
MAXIMUM WIND DIRECTION (S)
57 1045
MAXIMUM SUSTAINED WIND AND TIME
APPROXIMATE PATH OF STORM CENTER (EYE)
APPROXIMATE PATH OF LOWEST PRESSURE
80°
75°
70°
45°
40°
35°
CARIBOU WBAS
28.88 0058-13
G-53 2359-12
1.15
32 0420
HOULTON FAA
28.90 2358-12
G-SSE 45 2358-12
1.27
MILLINOCKET
G-SE 45 est 2130-12
1.77
BANGOR - DOW AFB
G-SE 53 2030 &
2.74 2052
PORTLAND WBAS
28.75
G-SE 76 1913
62 1913
42 1537
CONCORD WBAS
28.72 1900-12
G-51 1715
5.40
30 1258
37 1431
ALBANY WBAS
29.09 1658-12
G-52
4.92
BOSTON WBAS
28.64 1805-12
G-S 79 1645
2.95
BLUE HILL OBS.
28.52 1746-12
G-SSE 140 1637
2.79
92 1632
43 1455
WORCESTER WBAS
28.60 1730-12
G-NE 47
5.31
57
1645
PROVIDENCE WBAS
28.66 1455-12
G-S 81 1524
2.22
58 1524
NANTUCKET WBAS
29.05 1642-12
G-73 1640 & 1906
0.14
56 1634
HARTFORD WBAS
28.68 1558-12
G-NE 58 1458
5.15
35 1400
BLOCK ISLAND WBO
28.58 1530-12
G-S 130 1615
1.49
95 1615
NEW HAVEN WBAS
28.55 1500-12
G-E 53 1400 &
G-WNW 53 1700
5.26
61 132
70
51 1108
LAGUARDIA
28.64
G-93 1200
3.70
NEWARK WBAS
28.73 1335-12
G-NE 67 1223
2.48
NEW YORK CITY WBO
28.65 1400-12
G-NE 82 1326
4.70
56 1443
TRENTON WBO
29.00 1140-12
3.64
37 1018
PHILADELPHIA WBAS
28.91 1046-12
G-59
5.43
49
60 1238
ATLANTIC CITY WBAS
28.60 1055-12
G-WNW 83
3.19
58
ATLANTIC CITY STATE MARINA
28.38 1220-12
G-77
2.05
WILMINGTON WBAS
29.05 1019-12
G-N 51 1018
5.62
39 1017
DOVER AFB
28.85 0930-12
G-NNW 65 1017
5.30
58
SALISBURY FAA
28.76 0801-12
G-NNW 83 1002
5.96

TROPICAL CYCLONE DATA

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Time	Maximum Winds M.P.H.	Time	Gusts	Time	Tide* (feet)	Rainfall (inches)	Remarks
FLORIDA									
Alexander Springs			75					4.17	Lull one hour 0400-0500-11. Sky clear.
American Shoals L.S.			NW 110						
Avon Park			100-125	2100-10				6.50	Citrus damage. 2 heart attacks on 11th.
Babson Park								5.35	Lull 1200-10. Citrus damage very heavy.
Bartow			E 85		110				
Bartow A.F.B.			80					6.75	Lull 2200-2300-10.
Belle Glade Ex. Sta.	29.35	1215-10	52	1520	60	1507		4.62	Minor damage.
Blitho								5.05	Lull 0130-11. Minor damage.
Bradenton	29.01	2045-10						4.20	Tide below normal about 1800-10.
Bunnell			SE 85-90	0300-0500-11					Calm lasted 1-1 1/2 hours beginning about 0600-11.
Bushnell								5.33	Some lull around 0230-11.
Captavia and Sanibel Is.	28.68	1530-10	NW 130	1530-10				5.36	Tide about 4 1/2 feet MLW about 1600. East end of Sanibel Island partly flooded. Gales 20 hours.
Cedar Key	29.62	1600-10	N 10						
Carysfort Reef L.S.	29.29		120						
Clermont (Citrus Twr.)	28.50	0130-11			97				Lull 0155-0215-11.
Clermont 6 S								5.55	Lull 0130-0230-11. Sky cleared somewhat.
Conch Key	27.55								Lowest observed pressure by calibrated aneroid barometer during Donna.
Clearwater	29.20	2200-10	NNE 50	2100-10	60			4.3	
Clewiston (AE) #2	29.18	1600-10	68	1520-25	84	1430		3.24	Gales 17 hours.
Crescent City								3.58	Wind strong from north after eye passed 0510-0600-11.
Daytona Beach 5 1/2 N	28.6								Calm for 50 minutes beginning at 0445-11.
Deland			90					4.74	Wind ceased, stars shining 0330-0345-11.
DeLeon Springs			ESE 60-70					5 1/4	Clear sky, no wind, no rain for 30-60 minutes starting about 0430-11.
Duck Key	27.68	0145-10							In eye 1 hour 20 minutes at 0105-0225-10.
Egmont Key	29.28	2000-10	N 52-58	1900	69	1900			
Everglades	28.13	0915-10	NE 150		144m 175e		10.5 MLW		Gales 13 hours. No calm, but decrease about 0930 and sky brightened as wind shifted NE-SE-SW. Instruments blown away. High tide about 1430. Tide 1.0 feet below normal low at 0930.
Everglades 40-Mile Bend	29.05	0805	SSE 48						
Flamingo Churn	27.90	0345-10	70	0045-10	86		12.0 MLW		Instruments blown away before strongest wind.
Flagler Beach									Calm began 0515-11, sky clear, moon visible, lasted nearly 2 hours. Last 80 feet of pier destroyed.
Ft. Green								7.80	Lull 2100-10. Roof damage to almost all buildings.
Ft. Lauderdale	29.51	1700-10	60	1630-9					
Ft. Meade									Eye over city between 2130-2300-10.
Ft. Meade 4 1/2 E	28.60	2235-10		90-100	150				
Ft. Myers Beach									Sun broke through in eye.
Ft. Pierce	29.35	2000-10	SSE 40	1900	78		4 MLW	1.63	Tide 1300-10.
Grassy Key Churn									In eye 1 hour 20 minutes.
Hillsboro Inlet L.S.	29.53	1500-10	SW 73	0614-10					
Homestead A.F.B.	29.17	0436-10	ESE 60	0436	89			12.17	
Inglis	29.56	1500-10	NNE 10						
Isleworth	28.48	0145-11	65	0130	85			6.83	
Juniper Inlet L.S.	29.43	1800-10							
La Belle								3.90	Slight decrease and shift in wind velocity from NE to SE 1500-1530-10.
Lake Alfred								8.5	Lull and wind shift NE to SW about 2340-10 to 0030-11.
Lake Placid	28.99	1900-10						4.28	
Leesburg WARN	28.88	0130-11	NE 62	0130	96				
Land O Lakes		2300-10	65					4.43	
Lignum Vitae Key	27.85				155				Lull 20 minutes.
Lisbon								4.59	Lull 0240-0330-11.
Marathon Shores Churn	27.98		120+					12.10	Eye just to north at 0200-0230-10, tide approximately 6 feet over U.S. 1. Anemometer at end of range.
Melbourne FAA	29.26	0200-11	S 58	0056					
McCoy A.F.B.	28.71	0240-11	55	0120-0145	73	0032		3.80	
McDill A.F.B.	29.09	2200-10	NW 50	1700	75	1700		4.36	
Mirror Lake (St. Petersburg)	29.15	2030-10	N 40-50		N65			3.43	
Moore Haven Lock 1	29.11	1600-10	E &ESE 79	1500 & 1600-10				4.08	
Mountain Lake Park								6.14	Lull from 2315-2330-10.
Myakha State Park								6.59	Lull 1845-10.
New Smyrna Beach L.S.	28.84	0430-11	SE 66	0400					
Naples Churn	28.04	1220-10			100*	0930	10.2 MLW		Tide surveyed, 3-4 feet of water in most of City. Eye from 1200-1300. *Highest measured gust. Station abandoned.
Nittaw								5.32	Lull 0500-11.
Osprey		2115-10							Rain and wind subsided. Stars out until 2135.
Ocean Ridge Churn			60-70	0845-0900-10					
Orange City									Light areas to west during 45 minute calm just before 0400-11.
Odessa			70					2.95	
Parrish					120			8 1/2	Lull 2115-10.
Pinellas Park			42	0000-11	68			2.10	

Many pressures are aneroid barometer readings. Maximum winds and gusts are estimates in many cases.
Tides above normal except where indicated. All times are Eastern Standard Time.

TROPICAL CYCLONE DATA

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Time	Maximum Winds M.P.H.	Time	Gusts	Time	Tide* (feet)	Rainfall (inches)	Remarks
FLORIDA (Continued)									
Plant City				2300-10				7.45	
Punta Gorda	28.18	1600-10	NNE 130	1500					Eye overhead at 1700. Wind equipment out after 1500.
Ruskin	29.07	2115- 2200-10	87					5.7	
Sarasota	29.02	1900-10	WNW 60-70		95				
Sanford Navy	28.73	0258-11	SSE 53		67			3.73	Apparent eye 5 miles NW. Gust 99 mph in tower.
St. Leo	29.00	0200-11						6.65	
Sombrero Key L.S.	28.44		NW 128	0130-10	150				Wind is fastest mile.
Stuart Radio WSTV	29.46	1800-10	ESE 60	0900			1		Tide above normal in St. Lucie River about 4 miles west of inlet.
Stuart Sewalls Point	29.52	1300-10	35		60		2.5	1.38	Tide 2.6 at Lueder Dock at 1030-10.
Tarpon Springs	29.32	0100-11	NNE 60-70	0100				2.60	
Tavernier	28.80		120				13.7		Wind instrument at maximum reading for 4 hours.
Treasure Island	29.00	2200-10 0000-11	NW 45-50	2300	65	2300			
Tampa (West Shore)			55		75			2.20	
Venice	28.97	1900-10	NNW 60-80	2100	98	2100			
Wauchula	28.40	2100-10	100-125	2100-10	140			7.4	Possible small tornado just E. of center.
Winter Garden	28.58	0220-11						6.2	Calm 0150-0227-11.
Winter Haven								7.20	Lull 0100-0140-11. Wind shifted E. to W.
SOUTH CAROLINA									
Sullivans Island Churn	29.05	1645-11	N 40	1645	N 70	1645		4.29	
McClellanville Churn	28.95	1700-11	WNW 45	1900	WNW 70	1900		4.75	
Georgetown Churn	28.96	1600- 1700-11	40	1830	70	1830	5.3 MLW	5.50	
Ocean Beach Drive Churn	28 50				NW 100	2000- 2030		11.00	
NORTH CAROLINA									
New Bern FAA	28.46	0100-12	WNW 58	0320-12	WNW 105	0320		5.75	Calm 0100-0145-12. Wind shift SE to WNW. Moon visible thru breaks in overcast.
Elizabeth City	28.44	0400-12	SE 83	0100-12				2.73	Calm 0400-0500, wind shift SE to NW, sky remained overcast.
Jacksonville, USMCAF	28.38	2350-11	NW 48	0100-12	WNW 87	0107		7.21	No complete calm but definite slackening from 2300-11 to 0030-12, wind shift ESE to NW and West, large oval opening nearly 1/10 sky coverage. Moon and stars clearly visible.
Cherry Point USMCAS	28.40	0040-12	W 58	0311-12	ESE 77 W 77	2316 0311		5.42	Wind slackened 0000-0130, wind shift from E to S to W.
Morehead City	28.55	0030-12			ESE 90	0000	4 1/2 to 5		
Holden Beach	28.52	2000-11			80		4-5		In eye 30 minutes. Station evacuated.
Oak Island	28.50	2100-11			90	2000			In eye 1 hour. Station evacuated.
Swansboro		2120-11			85-90	2120	8		Evacuated
New Topsail Beach	28.42	2220-11			100	2040	7 1/2	5.00	Waves 15 feet high.
Sneads Ferry	28.38	2200-11			100		5-6		In eye 1 hour 30 minutes.
Washington	28.48	0200-12	77	0110-12			5 1/2	5.05	
Belhaven	28.30	0200- 0245-12					3-4		In eye 45 minutes
Tarboro	28.96	0215-12	NW 75	0215-12	NW 90	0215		5.85	
Manteo	28.50		80	0300-12	120				
Atlantic Beach	28.46	0005-12							
VIRGINIA									
Norfolk FWF					89	0648- 12			
MARYLAND									
Ocean City		0820-12	E 83						Wind before instruments became unreliable.
Salisbury FAA	28.76	0801-12	NNW 58		NNW 83	1002		5.96	Wind slackened 0801-0858.
NEW JERSEY									
Wildwood Churn	28.60		W 50		100			2.05	
Beach Haven Churn	28.48		WNW 40	1300- 1330	80				
Long Branch	28.55	1220-12	E 72	1256	E 79	1256		5.96	
Seaside Park	28.46		W 40		W 70				
NEW YORK									
Brookhaven	28.38	1450-12			SE 65	1310			Wind shift SE then S to SW and W and lull 1430-1500. Wind gusts, 300 foot level, SE 90.
Willets Point							7.1		
Montauk					125				
Nassau								5.57	
Glen Falls			NNW 30-50						
Tannersville								7.30	
Poughkeepsie					50				

Many pressures are aneroid barometer readings. Maximum winds and gusts are estimates in many cases.
Tides above normal except where indicated. All times are Eastern Standard Time.

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Time	Maximum Winds M.P.H.	Time	Gusts	Time	Tide* (feet)	Rainfall (inches)	Remarks
CONNECTICUT									
Bridgeport	28.57		NW 48				11.7 MLW		
Canel Site-Middleton	28.66	1554-12	SE 44	1435	ESE 64	1412			Wind calm 2 1/2 minutes beginning at 1554.
Groton			SW 52		SW 58	1700	7.5 MLW		
Lighthouse Point-New Haven					E 62	1321			
Milford							6-7 MLW		
Putnam					SSW 75	1500			
RHODE ISLAND									
Point Judith			90-100	1615					
MASSACHUSETTS									
Belket								5.17	Strongest wind and wind shift from NE to W at 1800-12.
Belchertown	28.58	1700-12	NE 50	1600				4.48	Calm 1700-1800
Brockton	29.04	1830-12						1.98	Lull 1600-1615
Clinton								4.12	Lull 1800-1815
East Wareham	29.00	1630-12	S 80-85	1830				1.16	Wind shift E then S to SW.
Fall River	28.75	1830-12			93	1623		1.96	Wind slackened and shifted E thru S to W.
Haverhill	28.60	1930-12	SSE 50	1845	E 65	1850		3.99	Wind slackened and shifted SSE to SSW, 1930-1953.
Lowell	29.02	1530-12						3.86	Wind shift from NE to SW about 1730.
Medway	28.60	1530-12	SE 66	1520				4.88	Calm 1555-1615, wind shift SE to NW, thin clouds during calm.
New Bedford	28.88	1700-12						0.76	Lull 1430-1530 wind shift SE to SW.
Oxford								4.48	Calm 1600-1645, sunny to scattered clouds during calm.
Rockport							12 MLW	1.88	High tide at 1930. No calm.
Salem USCG	28.68	1900-12	S 55	1800	S 78	1800-1900	9.1 MLW	2.17	High tide at 1423.
Sandwich			SE 70-85	1750				1.22	Heavy salting.
Shelburne Falls	28.96	1730-12						5.17	Strongest wind from west.
South Royalston	28.76	1730-12						4.45	Calm 1720-1820.
Turner Falls	28.80	1700-12						4.36	Wind shift 1600 from NE to NW.
Walpole	28.59	1739-12	SE 60	1642	75	1645		4.11	Wind slackened and shifted SE to SW, about 1720-1800.
Westover A.F.B.	28.76	1705-12	WNW 47	1858				3.87	Calm 1557-1636.
MAINE									
Bangor (Dow A.F.B.)			SE 30	2010-2155	SE 53 SE 53	2030 2052		2.74	
Belfast							9 MLW	2.42	High tide 1730.
Brunswick NAS	28.81	2100-12	SSW 67	2003				2.09	
Gilead			55-60	2000-2100	60-70	2030		6.22	Wind shift E to W.
Houlton FAA	28.90	2358-12	SSE 29	2358	SSE 45	2358		1.27	
Millinocket					SE 45	2130		1.77	Wind shift SE to W at 2200.
Waterville	28.86	2300-12						2.27	
NEW HAMPSHIRE									
McDowell Dam								7.25	
Keene	28.80	1600-12	E 30-40	1500	E 50	1500		4.35	
Hillsboro								6.05	
Hanover	28.89	1800-12	NW 18	2115				4.30	
Franklin								4.72	Lull and partial clearing 1800-1830.
VERMONT									
Readsboro								5.76	Sky cleared between 2030 and 2100, then cloudy with squall until 2230.
Somerset								6.63	
Wilmington	28.90	1700-12						5.36	

Many pressures are aneroid barometer readings. Maximum winds and gusts are estimates in many cases.
Tides above normal except where indicated. All times are Eastern Standard Time.

HURRICANE ETHEL

Hurricane Ethel developed rapidly in the central Gulf of Mexico early on September 14. The position and intensity of the circulation was established by the Marine Automatic Meteorological Observation Station being tested for the U. S. Navy at 25.0°N., 90.0°W. The 9:30 a.m., c.s.t., observation, monitored at Burrwood, La., indicated a wind of 55 knots (63 m.p.h.) from the east-northeast and a pressure of 987 millibars (29.15 inches), a fall of 20 millibars in 3 hours. The hurricane intensified rapidly after detection. A central pressure of 28.70 inches and winds of 125 to 150 m.p.h., were reported by reconnaissance aircraft during the afternoon. However, this strength was very short-lived, as slightly cooler and drier air entered the circulation and maximum winds dropped sharply. At 6 a.m., c.s.t., on the 15th the storm center was located just east of the Louisiana delta about 80 miles south-southeast of Mobile, Ala. The center reached the coast near Biloxi, Miss., about 5 p.m., c.s.t., with the lowest pressure on land, 28.98 inches, at Keesler A. F. B.

The only section of the coast which was touched by winds of hurricane intensity was the eastern Louisiana delta. The highest measured sustained wind, 90 m.p.h., with gusts to 105, occurred at Venice, La., at 4:15 a.m., c.s.t., on the 15th. The Coast Guard station at Quarantine also estimated winds of about 90 m.p.h., at 4 a.m. Strong winds, although not of hurricane force, extended over a larger area in the eastern half of the storm. Burrwood, La., just to the west of the track had a sustained wind of 52 m.p.h. with gusts to 69 m.p.h., while along the Mississippi coast, winds at Gulfport were estimated at 60 m.p.h., with gusts to 70; Ft. Morgan, Ala., measured 60 m.p.h., with gusts to 70, and Ft. Walton Beach, Fla., had 43 m.p.h. winds.

The right forward quadrant also was marked by the appearance of several tornadoes, waterspouts, and funnel clouds in Florida on the 15th from the Panama City area westward to the Pensacola region with some damage reported at West Bay, Springfield, Sumatra, and near Milton. Some tornadoes or local windstorms also struck areas of interior Alabama on the 16th.

Rainfall was spotty and generally heavier east of the storm track. Amounts along the coast ranged from near 2 inches in southeastern Louisiana to 7 inches or more in southern Alabama and extreme western Florida. The heaviest reported amount was 12.94 inches at Milton Experiment Station, Fla. Winds over inland sections were generally only 15 to 20 m.p.h., and no damage resulted. Elsewhere in Mississippi and Alabama, and in Tennessee and Kentucky along the storm track, the greatest effect was moderate to heavy rains in many sections on the 16th and 17th. Local totals of 4 to more than 6 inches were reported in Alabama, 2 to 4 inches in Mississippi, and 2 to 3 1/2 inches in middle Tennessee, the Cumberland Plateau, the southern portion of east Tennessee, and central and southern Kentucky. Many sections where heavy rain fell had been dry in preceding weeks and the rains were beneficial.

Most damage caused by Ethel was confined to the immediate coastal areas, resulting from tides, heavy rains, and wind. Tides ranged from 2 to 3 feet above mean low water around Burrwood, to 4 to 5 feet along much of the Mississippi and Alabama coast, and 3 to 4 feet in northwest Florida.

Approximate estimates of damage include:

	Crops	Property	Total
Louisiana	$ 50,000	$ 50,000	$100,000
Mississippi	160,000	300,000	460,000
Alabama	150,000	Minor	150,000
Florida	250,000	100,000	350,000

There were no injuries or deaths reported.

TROPICAL CYCLONE DATA

HURRICANE ETHEL
September 14-17, 1960

Station	Sea Level Pressure (inches)	Time	Wind				Tide * (feet)	Rainfall (inches)
			Fastest Mile	Time	Gusts	Time		
ALABAMA								
Anniston	29.98	1901-16	SSW 22	0159 -17	SSW 40			4.34
Birmingham	29.92	1445-16	E 26	1317	ESE 33			1.73
Ft. Morgan (USCG)			60	1015	70			
Mobile	29.66	1505-15	ESE 36[1]	1053	SSE 51	2006	3.92	3.22
Montgomery	29.94	1458-15	S 27	1502	SSE 35			2.04
LOUISIANA								
Burrwood	29.44	0328-15	N 52	0328	N 69	0315	2-3	
New Orleans WBO	29.66	1300-15	E 23	2049 -14				
New Orleans WBAS	29.71	1355-15	NNW 19	0530	NW 27	1055		
Port Sulphur	29.72	0530-15	NW 45	0530			1.75	1.96
Quarantine (USCG)	29.45	0400-15	† N 92	0400				
Venice	28.70	0500-15	ENE 90	0415	ENE 105	0415		
Violet	29.65	1400-15	†NW 50	1415				2.07
MISSISSIPPI								
Bay St. Louis	29.48	1730-15					3-4	5.58
Biloxi (Keesler AFB)	28.98	1700-15	NE 56	1353				
Gulfport	28.92	1500-15	† N 60	1500	† N 70	1500	5	
Meridian	29.78	16	ENE 25[1]		46			
Pascagoula	29.50	1500-15	SSE 43	1600	ESE 55 SSE 55		4.5	
FLORIDA								
Apalachicola					50	1052	3-4	
Pensacola WBAS	29.77	0540-15	E 32	0458	51	0758	2.5	
Pensacola WBO	29.77	0515-15	E 31	0540				

[1] One-minute wind speed. † Estimated wind. *Tides are mean sea level, except when indicated. All times are Central Standard Time.

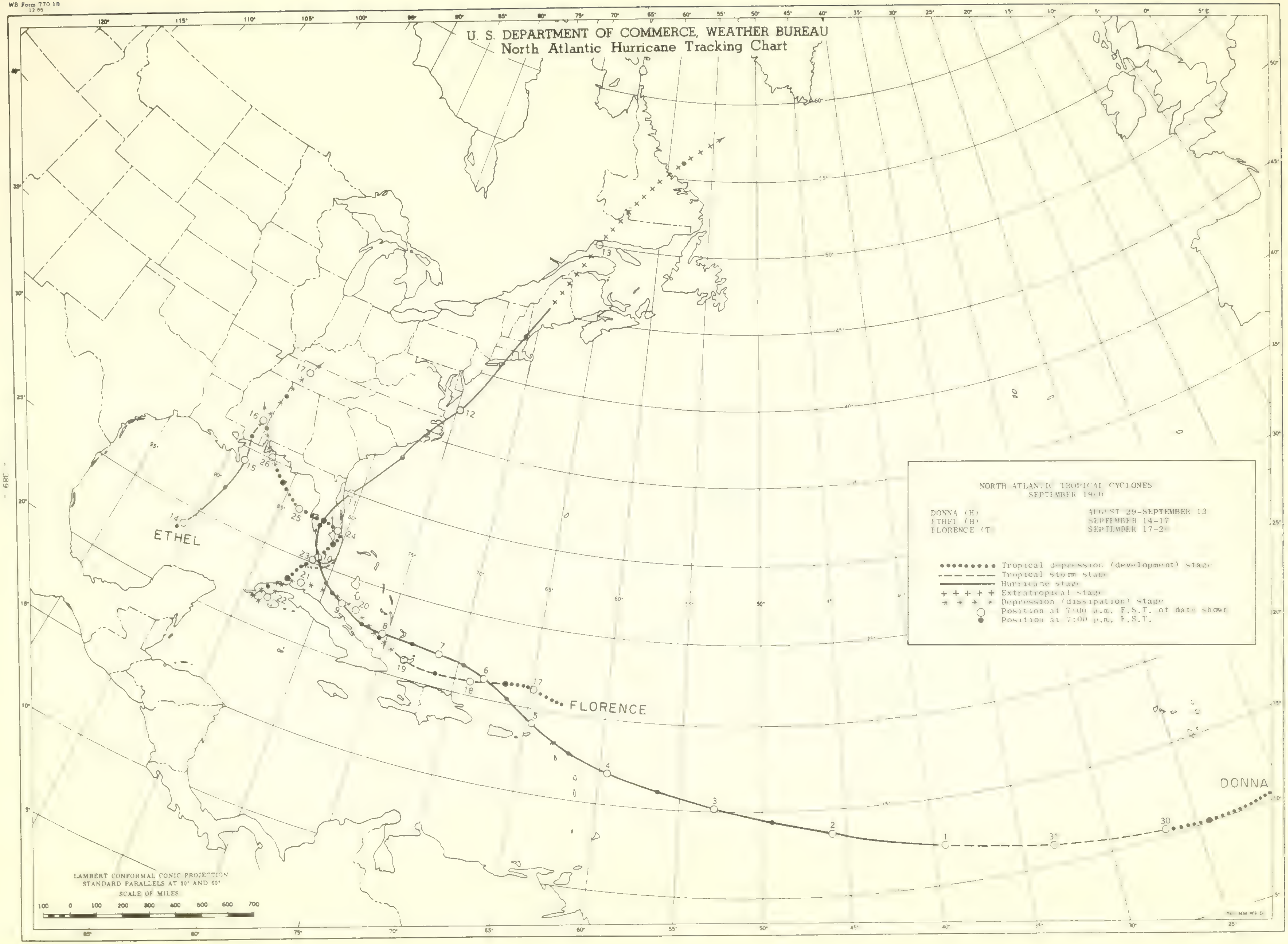
TROPICAL STORM FLORENCE

A strong easterly wave was moving westward north of Puerto Rico on the afternoon of September 17, with indications that a closed circulation was forming about 200 miles north of San Juan. Reconnaissance aircraft the next morning found that the circulation had developed during the night and winds were estimated at 50 to 55 m. p. h., in squalls near the center. The storm moved west ward through the southeastern Bahamas at a speed of 10 to 12 m. p. h., during the day on the 18th with no further intensification. During the night the storm weakened quite markedly, and by 11 a. m., e. s. t., on the 19th reconnaissance reports indicated only a weak circulation about 50 miles northeast of Great Inagua Island. On the morning of the 20th highest winds were 25 to 35 m. p. h., in scattered squalls between Cuba and the western Bahamas. On the 22d a broad trough of low pressure with widespread shower activity in Florida, the extreme northeastern Gulf of Mexico, and the northwestern Caribbean were all that remained.

By the morning of the 23d the trough was still present with a weak circulation centered on the lower southwest Florida coast just east of Everglades City, and winds still only 25 to 35 m. p. h., in squalls. Moderate to heavy rains spread over southeast and east-central Florida from the Upper Keys to Melbourne. Twenty-four hour totals of 5 to 10 inches were recorded in sections of Dade and Broward Counties and some 2-day totals well above 12 inches were measured there and in the Vero Beach area, although by the 24th rainfall had slackened in most areas. Sections of the Bahamas also recorded heavy totals, including up to 5 1/2 inches in 6 hours at Grand Bahama Island. Highest winds were about 15 to 35 m. p. h., in most sections of central and south Florida, with some occasionally higher gusts along the east coast. On the 25th and 26th the weak circulation became part of a low pressure trough in the northeastern Gulf of Mexico, and moved northwestward to the Alabama coast, passing inland during the morning of the 26th. It dissipated over southern Alabama and Mississippi later in the day, leaving light to moderate rainfall totals in sections of those States, northern Florida, and southern Alabama and Georgia.

The heavy rains augmented the existing flooding in southeastern Florida, caused additional flooding in other east coast areas which had missed earlier hurricane rains, and produced some light flooding in northwest Florida. Overall damage was small and no injuries or loss of life have been reported.

WB Form 770 18
12 59



U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
North Atlantic Hurricane Tracking Chart

NORTH ATLANTIC TROPICAL CYCLONES
SEPTEMBER 1960

DONNA (H)	AUGUST 29-SEPTEMBER 13
ETHEL (H)	SEPTEMBER 14-17
FLORENCE (T)	SEPTEMBER 17-26

- ●●●●●●●●● Tropical depression (development) stage
- — — — — — Tropical storm stage
- ———— Hurricane stage
- + + + + + Extratropical stage
- * * * * Depression (dissipation) stage
- ○ Position at 7:00 a.m. E.S.T. of date shown
- ● Position at 7:00 p.m. E.S.T.

STORM SUMMARY

SEPTEMBER 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				Ø ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE	
								PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS
Alabama	2	2	0	2	5					0	0	4	0													0	0	4	5
Alaska																												5	
Arizona	1	1			4						12	5																	
Arkansas														1	1														
California						0	0	3	0	0	0	3	0	1	1	6	0												
Colorado						0	0	4	4	0	0	4	0	0	2	1	0									2	4	4	3
Connecticut																5										0	S	5	5
Delaware																										0	0	5	6
Florida 1/	5	3	0	0	5					z12	z1794	8	7	2	0	0	0												
Georgia																										0	0	4	0
Hawaii *																													
Idaho										0	2	°5	C			4													
Illinois						0	0	4	4	0	0	5	3	0	0	5	0									3	1	4	3
Indiana	1	1	0	0	5									0	0	4	0												
Iowa	1	1	0	0	4	0	0	3	3	0	0	4	4	0	0	3	3									0	0	3	3
Kansas																										0	0	5	0
Kentucky									3		1	4	3	3	1														
Louisiana	1	1	0	0	4					0	0	5	5																
Maine										0	0	6	5	0	0	4	0									0	0	4	0
Maryland																										2	3	6	6
Massachusetts										3	51	6	5	0	1	4	0									0	0	4	0
Michigan								3	4	3	19	6	4		5														
Minnesota						0	0	0	4	0	0	5	0																
Mississippi										0	0	5	5																
Missouri *																													
Montana										0	0	4	3	0	0	0	3												
Nebraska						0	0	4	5					0	0	4	0												
Nevada																													5
New Hampshire										0		5	5													0	0	4	0
New Jersey										9	S	6	6																
New Mexico	1	1	0	0	0									0	1	0	0												
New York	1	1			4				3	1		°6	C			4										2		°6	C
North Carolina	2	1	0	8	4	0	0	2	5	3/8	e100	7	7	0	0	4	0									0	0	4	4
North Dakota												4																	
Ohio										2	5	4																	
Oklahoma	1	1	0	0	3					0	0	4	0	0	0	4	0									0	0	0	3
Oregon						0	0	3	3	0	0	4	3	0	0	4	4									0	0	3	0
Pennsylvania																5	3									1		5	
Puerto Rico																										107	136	7	6
Rhode Island																										0	S	6	6
South Carolina	2	1	0	10	6					0	0	5	4	2	2	0	0												
South Dakota								4	4							3													
Tennessee						0	0	0	4																				
Texas	2	2	0	0	5	0	0	D	D	0	0	4	0																
Utah									3							4												4	
U. S. Virgin Is.																										0	0	4	3
Vermont										0	0	4	5													0	0	3	D
Virginia	1	1	0	0	D	0	0	D	D	0	0	D	D	0	0	D	0									3	6	D	D
Washington										0	0	3	0	0	0	4	0												
West Virginia *																													
Wisconsin						0	0	4	0	1	0	0	0	0	0	5	0												
Wyoming *																													

*	No occurrence of storms or unusual weather phenomena.
°	Includes crop damage.
C	Crop damage
D	Occurred; estimates not available.
e	Estimated
S	Several
z	Red Cross figures.
‡	Includes heavy sleet storm.
#	Freezing drizzle and freezing rain, commonly known as glaze.
Ø	For breakdown of "All Others", and for detailed listing of other storms, see the U.S. Weather Bureau monthly publication STORM DATA.
1/	Windstorm damage by Hurricanes Donna and Ethel
3/	Hurricane Donna

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

SEPTEMBER 1960

Most of the flooding in continental United States during September was confined to the Atlantic seaboard and occurred as a result of heavy rains accompanying hurricane Donna. The most severe flooding occurred in southeastern New York in the small streams of the central and northern Catskills and in Greene County. The heavy rains resulted in another flood on the Hillsborough River at Tampa, Fla. This was the third major flood in Tampa this year. The crests were about 1 foot below the flood of July-August 1960.

Serious flooding occurred in Puerto Rico in all river systems from the Rio Grande de Manati eastward from rains of unprecedented intensity over the eastern portions as hurricane Donna passed about 85 miles to the north of the island during the evening of September 5. Even though Puerto Rico did not feel the full effects of the hurricane, there was a large loss of life with extensive property damage and agricultural losses. A large portion of the property damage was sustained to houses built in or very near to the river beds. Warnings were timely and were disseminated promptly, but 107 persons were reported drowned and property losses will amount to many millions of dollars. During the heavy rain, a 12-hour amount of slightly more than 12 inches was reported at Carite Dam. A 24-hour amount of 14. 07 inches was reported at Cayey and a 48-hour total of 18. 78 inches fell on the northeast slope of the Luquillo Mountains. Amounts exceeding 10 inches fell over a large area of the eastern interior section of the island. (See the article "North Atlantic Tropical Cyclones" in this publication).

ATLANTIC SLOPE DRAINAGE

Heavy rains in connection with hurricane Donna on the 11th, 12th, and 13th caused light to severe small stream flooding in southeastern New York, New Hampshire, Vermont, Massachussetts, Rhode Island, and New Jersey. The Park River, tributary of the Connecticut, crested slightly below bankfull stage at Hartford, Conn. The most severe flooding occurred in the small streams of the central and northern Catskills. Unprecedented flooding occurred in the streams of Greene County, New York, especially in the Windham area. Rainfall in this area was measured up to 10 inches and very likely exceeded this amount. Rainfall generally averaged 4 to 6 inches over much of southeastern New York. The Hoosic River at Eagle Bridge, N. Y., reached flood stage early on the morning of the 13th and quickly receded without appreciable damage.

Sharp rises occurred on all New Jersey streams with flooding on the Millstone, Raritan, Ramapo, Passaic Rivers and Assunpink Creek. Some roads and underpasses were blocked. Flood damage was negligible.

The heavy rains from hurricane Donna averaged 4 to 5 inches in the Delaware Basin. Most of the small streams in Philadelphia, Pa., and surrounding counties were overflowing during the afternoon of the 12th, as the rain stopped. The period of heaviest rain was during the morning hours of the 12th. The upper tributaries of the Delaware River above Port Jervis, N. Y., ran bankfull with some overflow. The Schuylkill River crested at 11. 6 feet, 0. 4 foot below flood stage, on the 12th. There was some overflow on Darby Creek through the Philadelphia suburban areas of Clifton Heights, Darby, and Sharon Hill. A small boy was drowned in Sharon Hill when the bank on which he was standing caved into a small branch of the Darby Creek. The greatest rises occurred on Brandywine and Perkiomen Creeks. The Brandywine Creek reached a a height of 12. 5 feet at Chadds Ford, Pa., 3. 5 feet above flood stage. There was little if any permanent damage in this area, but there was considerable cleanup work necessary for 8 to 10 miles upstream because of overflow into fields, farmyards, and an amusement park. Route No. 100 was under water, 2 to 3 feet at many points. Damage downstream from Chadds Ford was negligible, as the creek stayed within its banks in all residential and industrialized areas. Perkiomen Creek reached a stage of 14. 5 feet, 4. 5 feet above flood stage at Graterford, Pa. Lawns and approaches to 25 to 30 cottages were under water, but probably no inhabited houses were subjected to water entry. Damages were slight. Throughout the metropolitan Philadelphia area, including Camden and surrounding counties in New Jersey, there were many instances of overflow blocking traffic on main and secondary roads throughout the afternoon of the 12th. However, the overall damage from flooding was small.

The minor flooding on the Tar and Neuse Rivers in North Carolina between the 14th and 20th was due to 4 to 7 inches of rain accompanying hurricane Donna on the 11th and 12th. Flooding was confined to the central and downstream portions.

There was no flooding along the main streams in South Carolina due to the heavy rains accompanying hurricane Donna. There was some flooding along the coast in the poorly drained areas. The Black River at Kingstree, S. C., rose about 7 feet in 2 days (flood stage 12 feet). The Waccamaw River at Conway approached within 1/ 2 foot of flood stage. Shallow flooding occurred along the South Carolina coast and tidal streams as hurricane Donna skirted the coast on the 11th.

Heavy local rains on the 6th and 7th caused flash flooding on Lyle Creek at Catawba, N. C. Up to 6 inches of rainfall was reported in an 18-hour period. Damage was mostly to crops and pastures near the mouth of Lyle Creek. There were no general rises on the Catawba due to the scattered nature of the rainfall. The upper Yadkin River reached a level near 12 feet at Wilkesboro, N. C., on the 7th (flood stage 14 feet) from locally heavy rains of 1. 5 to 2 inches.

MISSISSIPPI SYSTEM

Upper Mississippi Basin. --Flooding developed in south-central Iowa on the South River at Ackworth, Iowa, on the 24th due to 2 to 3 inches of rainfall. Damage was minor as flooding was very brief.

Arkansas Basin. --The minor flooding on the Little Arkansas on the 24th was due to heavy rain (3 inches) on the 23d and 24th. No significant damage occurred with the slight flooding

WEST GULF OF MEXICO DRAINAGE

Minor flooding occurred on the lower Nueces River at Calallen, Tex., from August 31 to September 2 due to heavy local showers on August 28.

GREAT BASIN

A flash flood occurred 5 miles southeast of Hanna, Utah, on a small tributary to Farm Creek on the 2d. Damage from the high water consisted of a washout of a crossing on Farm Creek and mud and debris being deposited on State Highway 35.

A flash flood occurred on Peterson Creek near Sigurd, Utah, on the 5th. A bridge was damaged and made unusable when both abutments were weakened and the center pier was completely destroyed.

FLOOD STAGE DATA

(All dates in September unless otherwise specified)

SEPTEMBER 1960

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft.			*Ft.*	
ATLANTIC SLOPE DRAINAGE					
Hoosic: Eagle Bridge, N. Y.	12	13	13	12.0	13
Ramapo: Mahwah, N. J.	8	13	13	8.5	13
Pompton Lakes, N. J.	1.7	13	13	1.8	13
Passaic: Little Falls, N. J.	#126	14	14	#126.1	14
Millstone: Blackwells Mills, N. J.	8	13	13	11.1	13
Raritan: Manville, N. J.	14	13	13	15.3	13
Boundbrook, N. J.	8	13	13	11.1	13
Assunpink: Trenton, N. J.	8	12	12	8.4	12
Perkiomen Creek: Graterford, Pa.	10	12	13	14.5	12
Brandywine Creek: Chadds Ford, Pa.	9	12	13	12.5	12
Delaware: Fishs Eddy, N. Y.	10.5	20	20	12.0	20
Tar: Tarboro, N. C.	19	14	17	20.7	15
Greenville, N. C.	13	14	19	15.9	17
ATLANTIC SLOPE DRAINAGE (Cont'd.)					
Neuse: Goldsboro, N. C.	14	14	17	16.9	16
Kinston, N. C.	14	15	20	15.15	19
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
South: Ackworth, Iowa	15	24	24	18.0	24
Arkansas Basin					
Little Arkansas: Sedgwick, Kans.	18	24	24	18.0	24
WEST GULF OF MEXICO DRAINAGE					
Nueces: Calallen, Tex.	7	Aug. 31	2	7.3	2

* Tentative
# Above sea level

RAWINSONDE DATA

Average monthly values

SEPTEMBER 1960

Standard pressure surface (mb.)	ALBANY, N. Y. (1009 MB.)						ALBUQUERQUE, N. MEX. (842 MB.)						AMARILLO, TEX. (895 MB.)						ANCHORAGE, ALASKA (1006 MB.)						ANNETTE, ALASKA (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	86	13.0	93	190	1.7	30	1,619	16.2	54	88	2.9	30	1,095	15.9	78	196	3.7	30	30	7.3	82	129	1.6	30	37	9.8	91	145	3.5
1,000--	30	164	13.2	86	192	2.1	30	122					30	136					30	75			144	3.1	30	159	10.2	87	154	3.1
950----	30	597	13.4	76	267	2.5	30	567					30	576					30	493	6.1	70	154	2.7	30	583	8.5	83	184	6.4
900----	30	1,052	12.1	75	279	5.8	30	1,037					30	1,043					30	938	3.3	73	160	6.0	30	1,031	6.2	81	208	6.2
850----	30	1,530	10.6	63	286	8.7	30	1,535					30	1,535	18.2	54	219	9.9	30	1,399	.1	77	161	8.4	30	1,498	3.7	76	227	9.3
800----	30	2,034	9.4	47	288	11.3	30	2,054	16.1	49	192	5.1	30	2,053	15.3	51	232	8.9	30	1,883	- 3.1	81	164	11.3	30	1,988	.9	72	234	11.1
750----	30	2,568	7.2	46	278	11.3	30	2,593	12.8	52	244	5.8	30	2,590	11.9	50	246	8.0	30	2,388	- 6.1	78	175	10.7	30	2,506	- 1.6	65	245	13.4
700----	30	3,133	4.6	41	277	14.2	30	3,177	8.9	55	269	8.0	30	3,172	7.9	51	287	6.4	30	2,929	- 8.8	71	186	12.4	30	3,053	- 4.4	50	250	15.9
650----	30	3,732	1.5	36	272	18.3	30	3,780	4.3	59	289	8.2	30	3,775	4.0	48	310	6.4	30	3,494	-11.8	62	199	13.6	30	3,630	- 7.5	46	249	19.2
600----	30	4,375	- 2.1		271	20.4	30	4,433	- .5	57	285	8.0	30	4,428	- .3	47	323	5.4	30	4,110	-15.0	61	206	13.4	30	4,254	-10.8	40	251	20.4
550----	30	5,056	- 6.0		267	22.3	30	5,116	- 5.3	52	272	10.3	30	5,107	- 4.8	44	315	8.7	30	4,758	-18.7	60	225	13.4	30	4,913	-14.7	38	251	21.4
500----	30	5,803	-10.7		266	25.6	30	5,866	- 9.9	38	278	10.9	30	5,864	- 9.2	36	310	8.0	30	5,468	-23.3	58	231	17.7	30	5,634	-19.4	40	256	24.3
450----	30	6,599	-15.9		262	28.8	30	6,669	-15.1		282	12.0	30	6,661	-14.5		302	8.2	30	6,223	-28.4	54	234	20.8	30	6,406	-24.8	41	260	26.8
400----	30	7,484	-22.3		267	31.5	30	7,554	-21.0		279	13.4	30	7,555	-20.7		298	11.5	30	7,067	-34.2	50	237	22.3	30	7,257	-30.9	43	259	29.9
350----	30	8,452	-29.4		263	33.4	30	8,526	-27.9		284	17.7	30	8,528	-28.0		280	11.9	30	7,990	-40.2		239	25.8	30	8,193	-37.2		267	34.6
300----	30	9,535	-37.7		260	35.6	30	9,615	-36.0		283	23.1	30	9,617	-36.2		295	19.6	30	9,026	-47.2		238	29.1	30	9,243	-44.5		268	34.2
250----	30	10,768	-46.7		265	39.8	30	10,858	-45.1		286	30.5	29	10,858	-44.8		298	22.2	30	10,216	-52.3		245	30.5	30	10,443	-51.9		272	34.6
200----	30	12,220	-55.1		268	42.7	30	12,317	-54.2		286	32.4	29	12,323	-53.4		296	25.1	30	11,663	-50.9		254	30.1	29	11,880	-55.7		277	34.6
175----	30	13,067	-58.4		271	42.0	30	13,165	-58.8		288	30.7	28	13,169	-57.8		294	26.0	30	12,535	-50.0		255	29.1	29	12,732	-54.8		272	34.6
150----	30	14,033	-59.7		270	40.2	30	14,122	-63.6		285	27.6	28	14,129	-62.7		291	22.9	30	13,544	-49.6		254	24.3	27	13,725	-53.9		266	30.1
125----	28	15,167	-61.6		266	35.2	30	15,229	-67.7		287	19.4	27	15,242	-67.0		295	17.1	29	14,741	-49.7		254	23.7	26	14,899	-53.9		265	25.3
100----	28	16,550	-61.5		267	29.5	29	16,568	-69.2		282	10.5	27	16,585	-67.5		297	10.5	27	16,199	-49.8		252	22.7	26	16,332	-53.7		267	22.5
80-----	28	17,939	-59.5		264	25.1	29	17,909	-66.0		343	2.1	25	17,935	-65.6		308	4.5	27	17,658	-49.6		253	18.8	23	17,777	-53.7		269	18.1
60-----	27	19,757	-55.8		251	12.0	28	19,679	-60.2		79	4.7	21	19,711	-59.9		89	3.1	27	19,538	-50.4		252	15.3	23	19,628	-53.3		270	10.3
50-----	27	20,922	-54.4		275	6.6	28	20,822	-57.7		93	8.5	20	20,858	-56.7		88	7.2	27	20,726	-50.6		257	14.8	23	20,803	-53.1		269	11.1
40-----	24	22,356	-52.6		254	5.1	28	22,239	-55.0		95	10.7	20	22,279	-54.5		84	10.3	26	22,180	-50.6		254	13.2	23	22,244	-52.7		286	8.2
30-----	24	24,226	-49.9		294	1.7	25	24,088	-52.4		85	11.3	17	24,142	-51.6		91	12.4	23	24,063	-50.0		262	13.2	19	24,085	-52.3		338	5.2
25-----	22	25,416	-48.6		326	3.9	25	25,271	-50.8		89	12.0	15	25,322	-50.0		90	11.1	22	25,255	-49.5		274	13.6	18	25,262	-52.0		26	5.4
20-----	18	26,892	-46.8		278	3.7	24	26,729	-48.7		95	11.5	11	26,799	-47.2		90	11.1	21	26,719	-48.5		278	11.9	16	26,701	-51.6		356	4.3
15-----	9	28,865	-43.2				15	28,643	-45.8		76	12.2	7	28,700	-44.2				15	28,622	-47.1		267	15.2	9	28,604	-49.2			
10-----																			5	31,398	-43.4									

	ATHENS, GA. (989 MB.)						BARROW, ALASKA (1014 MB.)						BARTER IS., ALASKA (1012 MB.)						BETHEL, ALASKA (1004 MB.)						BISMARCK, N. DAK. (958 MB.)					
SURFACE	29	246	18.2	95	46	4.7	30	8	- 3.9	92	67	5.1	28	15	- 1.2	95	51	2.5	30	4	4.2	93	339	2.5	29	505	9.6	70	336	0.6
1,000--	29	154					30	116	- 4.9	90	68	7.0	28	105	- 1.7	95	59	4.1	30	67			294	.6	29	143				
950----	29	594	19.0	81	72	8.4	30	516	- 6.3	86	81	6.4	28	509	- 3.2	90	52	2.7	30	483	4.2	77	326	2.3	29	575	10.4	67		
900----	29	1,061	17.2	76	98	5.6	30	941	- 7.0	84	74	4.7	28	939	- 4.7	87	323	1.9	30	925	1.5	77	301	2.5	29	1,027	13.6	49	263	6.2
850----	29	1,548	14.8	74	107	3.9	30	1,386	- 8.5	81	50	2.9	28	1,388	- 6.3	82	279	2.9	30	1,384	- 1.0	74	270	4.1	29	1,508	11.5	44	288	7.4
800----	29	2,060	11.5	68	174	2.7	30	1,855	-10.4	77	48	2.5	28	1,860	- 8.7	79	258	2.5	30	1,867	- 2.9	60	283	5.1	29	2,012	8.7	41	301	9.5
750----	29	2,594	9.6	63	203	3.3	30	2,347	-12.3	70	65	1.2	28	2,355	-11.1	77	261	4.9	30	2,375	- 5.3	57	302	6.2	29	2,539	5.8	43	302	13.4
700----	29	3,170	6.6	56	219	3.7	30	2,875	-14.7	60	317	.6	28	2,885	-13.5	73	260	7.8	30	2,916	- 8.0	56	308	6.8	29	3,106	2.5	46	292	16.7
650----	29	3,773	3.3	46	232	4.9	30	3,430	-17.8	59	301	1.7	28	3,440	-16.6	69	257	10.1	30	3,484	-11.3	56	300	8.2	29	3,698	- 1.2	47	290	21.0
600----	29	4,422	.2	35	227	5.1	30	4,028	-21.4	53	293	2.5	28	4,042	-20.3	66	258	12.0	30	4,101	-14.6	55	302	10.3	29	4,336	- 4.8	46	287	26.4
550----	29	5,107	- 3.6		225	6.0	30	4,660	-25.5	49	266	2.9	28	4,674	-24.3	61	257	13.2	30	4,751	-18.4	52	303	10.9	29	5,008	- 9.1	44	284	28.2
500----	29	5,862	- 8.2		215	7.6	30	5,351	-30.2	48	258	3.5	28	5,370	-29.0	59	255	16.9	30	5,462	-23.1	48	280	11.9	29	5,748	-13.7	41	286	30.3
450----	29	6,666	-13.4		227	9.3	30	6,088	-35.4	49	255	4.7	28	6,106	-33.7	57	251	20.8	30	6,220	-28.2	45	266	13.8	29	6,533	-19.4	35	285	33.8
400----	29	7,558	-19.6		239	10.9	30	6,905	-40.9		255	5.8	27	6,942	-39.0	57	249	24.9	30	7,064	-34.0	44	257	16.1	29	7,407	-25.4	35	285	35.6
350----	29	8,536	-26.5		245	13.6	30	7,803	-46.5		259	6.4	27	7,846	-45.3		249	31.9	29	7,989	-40.3		259	15.2	29	8,363	-32.4		282	37.9
300----	29	9,632	-34.4		244	17.3	30	8,813	-52.1		248	8.4	27	8,860	-51.5		249	39.1	29	9,025	-47.2		262	18.1	29	9,432	-40.3		283	40.6
250----	29	10,883	-43.3		242	24.1	30	9,991	-51.5		255	11.7	26	10,045	-52.6		246	39.4	29	10,216	-52.7		266	20.8	29	10,653	-49.1		275	39.4
200----	29	12,352	-53.3		247	30.3	30	11,455	-47.8		254	14.4	26	11,501	-48.6		253	27.4	29	11,660	-51.0		269	25.1	29	12,092	-55.6		272	41.8
175----	29	13,201	-58.7		248	29.7	30	12,338	-47.3		252	12.8	26	12,381	-47.9		256	23.5	29	12,531	-49.8		285	25.8	29	12,939	-56.8		276	42.4
150----	29	14,157	-63.8		260	24.1	30	13,358	-47.4		253	13.4	26	13,397	-48.0		259	20.0	28	13,536	-49.4		282	23.7	28	13,914	-58.5		276	40.8
125----	29	15,263	-67.6		259	18.7	30	14,563	-47.8		253	12.8	25	14,599	-48.1		261	17.9	27	14,723	-48.9		272	24.9	28	15,055	-60.3		274	33.8
100----	29	16,603	-68.2		258	8.9	29	16,040	-47.9		252	13.8	25	16,069	-48.1		259	17.9	26	16,189	-49.3		274	19.4	27	16,455	-60.2		275	23.9
80-----	29	17,952	-64.9		247	3.9	28	17,508	-48.8		256	12.2	25	17,537	-48.7		263	15.7	26	17,653	-49.4		264	15.5	27	17,853	-58.6		280	15.3
60-----	28	19,736	-59.2		73	5.1	27	19,393	-49.9		255	12.0	25	19,423	-49.8		262	16.3	25	19,538	-49.7		269	16.3	26	19,670	-56.3		282	8.5
50-----	28	20,887	-56.4		75	9.9	27	20,583	-50.7		256	12.8	24	20,610	-50.4		267	17.3	24	20,732	-50.0		258	15.3	26	20,831	-55.3		291	6.2
40-----	27	22,316	-53.8		87	12.4	27	22,034	-51.0		258	13.8	24	22,063	-51.0		269	16.9	23	22,185	-50.3		260	15.5	25	22,258	-53.8		295	4.1
30-----	27	24,179	-50.7		90	11.7	27	23,905	-51.0		261	16.3	22	23,927	-51.2		270	21.2	22	24,065	-49.9		258	17.7	23	24,115	-52.0		270	5.1
25-----	24	25,372	-48.7		86	13.4	27	25,091	-50.5		263	17.7	21	25,106	-50.6		271	22.2	20	25,253	-49.9		260	21.2	22	25,297	-50.5		285	3.7
20-----	18	26,826	-47.0		86	12.6	24	26,550	-49.8		259	18.3	18	26,557	-49.6		267	19.4	15	26,692	-49.4		263	20.0	20	26,753	-48.3		288	7.8
15-----	14	28,740	-44.3				21	28,459	-48.1		258	15.0	7	28,463	-47.0				9	28,556	-49.2				17	28,652	-46.2		273	10.7
10-----							5	31,157	-45.2																9	31,342	-41.8			

	BOISE, IDAHO (917 MB.)						BROWNSVILLE, TEX. (1013 MB.)						BUFFALO, N. Y. (994 MB.)						BURRWOOD, LA. (1013 MB.)						CAPE HATTERAS, N. C. (1016 MB.)					
SURFACE	30	868	13.4	56	138	5.2	30	7	21.7	94	328	2.7	28	218	14.4	87	142	2.5	30	3	25.2	85	44	4.5	30	4	22.0	87	9	3.7
1,000--	30	130					30	122	23.4	83	5	3.3	28	162					30	115	24.8	83	46	6.2	30	140	22.0	81	24	7.2
950----	30	567					30	566	21.6	76	74	4.5	28	598	15.0	76	220	6.0	30	565	21.9	80	55	6.2	30	580	19.0	80	14	4.7
900----	30	1,028	17.0	44	120	3.1	30	1,038	18.8	70	56	4.9	28	1,054	13.3	72	262	7.6	30	1,033	19.1	74	81	6.0	30	1,049	16.4	76	338	2.3
850----	30	1,516	16.9	35	84	1.6	30	1,528	16.0	63	33	7.2	28	1,533	11.3	62	260	8.9	30	1,523	16.3	67	90	4.5	30	1,534	14.1	68	317	2.9
800----	30	2,030	13.8	34	230	1.9	30	2,042	13.5	56	32	7.4	28	2,037	8.5	55	266	10.3	30	2,037	13.6	58	94	3.7	30	2,045	12.1	58	308	3.9
750----	30	2,565	10.1	35	252	5.2	30	2,580	11.1	50	28	8.7	28	2,567	6.2	48	263	12.2	30	2,575	10.8	54	133	1.6	30	2,583	10.2	48	278	4.3
700----	30	3,141	6.1	35	246	8.2	30	3,157	7.9	50	34	8.7	28	3,132	3.6	43	265	13.2	30	3,151	8.0	48	166	.6	30	3,156	7.5	45	274	5.6
650----	30	3,739	1.6	40	253	12.6	30	3,761	4.4	47	36	8.2	28	3,728	.5	40	268	15.3	30	3,757	4.7	40	310	1.0	30	3,760	4.4	40	261	6.8
600----	30	4,384	- 3.1	43	249	14.4	30	4,413	.8	45	35	5.6	28	4,369	- 2.9	34	263	16.3	30	4,408	1.2	39	294	2.5	30	4,411	.9	31	262	7.4
550----	30	5,058	- 7.5	37	251	18.8	30	5,100	- 2.9	38	38	5.2	28	5,047	- 6.9		262	18.8	30	5,098	- 2.6		286	5.1	30	5,100	- 3.1		267	9.1
500----	30	5,804	-12.6		253	19.2	30	5,858	- 7.2		27	5.6	28	5,790	-11.3		263	22.9	30	5,853	- 7.2		280	4.9	30	5,853	- 7.9		267	10.5
450----	30	6,594	-18.3		258	21.0	30	6,665	-12.4		10	6.0	28	6,584	-16.6		257	26.8	30	6,662	-12.4		263	4.7	30	6,658	-13.6		265	11.9
400----	30	7,470	-24.9		259	25.8	30	7,563	-18.5		339	4.1	27	7,463	-22.9		251	31.1	30	7,556	-18.3		253	6.8	30	7,550	-19.6		263	13.2
350----	30	8,428	-32.0		258	29.9	30	8,545	-25.1		305	6.8	27	8,428	-30.0		249	34.6	30	8,540	-25.3		248	7.6	30	8,528	-26.8		265	13.2
300----	30	9,499	-40.0		257	33.8	30	9,649	-33.1		289	9.9	27	9,507	-38.2		250	37.9	30	9,641	-33.5		245	8.5	30	9,623	-34.8		265	16.3
250----	30	10,721	-48.3		260	40.8	30	10,905	-43.0		288	13.8	27	10,738	-47.1		256	44.5	30	10,898	-42.4		240	13.8	30	10,871	-44.0		266	22.0
200----	30	12,169	-54.5		260	45.7	30	12,374	-54.3		284	14.8	27	12,188	-55.1		256	51.3	30	12,373	-52.9		245	15.7	30	12,337	-53.9		272	25.5
175----	30	13,019	-56.9		265	42.0	30	13,219	-60.3		283	13.4	27	13,038	-57.4		257	48.0	30	13,224	-58.6		250	14.8	30	13,185	-58.7		283	27.4
150----	30	13,991	-58.9		270	37.1	29	14,166	-66.1		291	10.7	27	14,006	-59.4		258	40.6	30	14,180	-64.3		245	11.9	30	14,143	-63.3		285	23.5
125----	30	15,130	-60.7		274	29.0	29	15,257	-71.1		300	6.4	27	15,143	-61.1		259	34.0	30	15,282	-69.1		258	7.0	30	15,254	-67.2		284	16.3
100----	29	16,513	-62.2		279	22.0	29	16,571	-72.6		54	7.8	27	16,528	-60.9		257	27.2	30	16,610	-70.5		28	3.3	29	16,598	-67.4		288	9.9
80-----	29	17,897	-60.5		292	12.8	29	17,895	-68.4		79	15.9	27	17,920	-59.2		257	17.9	30	17,943	-66.9		84	8.5	28	17,953	-63.7		336	2.3
60-----	28	19,700	-57.9		316	6.2	29	19,648	-62.1		92	19.4	25	19,730	-56.1		258	10.9	29	19,705	-61.0		81	12.2	27	19,742	-58.4		57	4.1
50-----	28	20,854	-56.4		320	4.7	29	20,785	-58.6		90	24.1	25	20,894	-54.4		256	9.7	28	20,845	-57.6		85	19.0	26	20,897	-55.8		78	8.4
40-----	28	22,276	-54.9		345	3.7	29	22,196	-55.7		87	33.4	24	22,327	-51.7		253	9.9	26	22,262	-54.4		84	21.4	23	22,333	-53.0		82	11.5
30-----	25	24,111	-53.2		293	5.4	29	24,044	-51.9		88	28.4	20	24,193	-49.8		250	6.6	24	24,114	-51.7		92	22.5	21	24,204	-50.0		88	11.5
25-----	22	25,284	-51.3		283	7.2	27	25,229	-50.1		89	28.8	13	25,393	-48.2		247	8.4	23	25,302	-49.9		91	23.5	17	25,405	-48.3		87	13.6
20-----	22	26,742	-49.0		276	7.8	25	26,696	-48.1		86	29.9	12	26,874	-46.2		265	8.7	18	26,775	-48.0		85	25.1	12	26,880	-46.3		92	12.0
15-----	18	28,623	-47.1		275	12.0	23	28,607	-45.4		82	31.7	10	28,777	-44.3		250	8.5	14	28,683	-45.7		84	26.0						
10-----							13	31,338	-40.6																					

See reference note at end of table

RAWINSONDE DATA

Average monthly values

CARIBOU, ME. (995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	191	9.2	89	245	2.9
1,000--	30	148				
950----	30	574	10.1	74	261	8.5
900----	30	1,024	8.4	70	282	12.8
850----	30	1,496	6.5	64	281	15.0
800----	30	1,993	4.8	57	280	17.5
750----	30	2,514	3.1	17	275	21.4
700----	30	3,075	.8	43	272	24.5
650----	30	3,662	- 2.1	40	272	25.1
600----	30	4,300	- 5.9	38	272	30.7
550----	30	4,972	- 9.9	42	270	33.2
500----	30	5,708	-14.4	42	267	35.2
450----	30	6,494	-19.7	41	272	35.9
400----	30	7,366	-25.5	40	263	40.2
350----	30	8,322	-32.0	39	264	43.9
300----	30	9,395	-39.8		265	46.4
250----	30	10,620	-47.7		266	55.6
200----	30	12,070	-54.5		272	54.4
175----	30	12,923	-56.0		269	50.5
150----	30	13,901	-57.4		265	43.9
125----	30	15,051	-58.7		265	35.6
100----	30	16,455	-58.0		272	28.2
80-----	30	17,867	-56.7		267	17.9
60-----	30	19,702	-54.4		256	11.5
50-----	30	20,873	-53.4		261	8.7
40-----	30	22,312	-52.3		264	7.2
30-----	27	24,186	-50.2		271	4.3
25-----	23	25,377	-49.0		275	5.2
20-----	23	26,849	-47.1		257	7.4
15-----	20	28,785	-44.1		280	10.5
10-----	8	31,613	-39.2			

CHARLESTON, S. C. (1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	13	20.1	96	15	5.2
1,000--	30	149	21.6	87	49	7.6
950----	30	592	20.6	79	88	7.4
900----	30	1,062	18.3	71	95	6.2
850----	30	1,550	15.4	69	94	4.3
800----	30	2,063	12.7	60	105	1.6
750----	30	2,597	10.4	51	159	1.9
700----	30	3,175	7.5	47	242	2.5
650----	30	3,779	4.1	47	224	5.6
600----	30	4,431	.7	40	211	5.8
550----	29	5,119	- 3.3		222	7.2
500----	29	5,876	- 7.9		223	8.0
450----	29	6,678	-13.3		229	7.8
400----	29	7,574	-19.2		237	8.0
350----	29	8,554	-26.2		251	11.5
300----	29	9,652	-34.2		250	15.5
250----	29	10,903	-43.7		258	19.0
200----	29	12,369	-54.1		264	24.5
175----	29	13,216	-59.4		265	23.3
150----	29	14,169	-64.6		267	18.8
125----	29	15,271	-68.6		267	13.0
100----	29	16,604	-69.0		290	4.7
80-----	29	17,950	-65.4		50	4.1
60-----	29	19,729	-59.0		83	7.8
50-----	29	20,880	-56.4		81	12.8
40-----	29	22,307	-53.5		88	15.5
30-----	28	24,176	-50.7		95	14.8
25-----	28	25,368	-48.7		87	16.7
20-----	26	26,847	-46.7		79	16.9
15-----	20	28,756	-42.9		75	17.1
10-----	6	31,536	-37.6			

COLD BAY, ALASKA (1006 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	27	7.9	88	216	2.9
1,000--	30	74			253	3.7
950----	30	497	5.7	85	205	3.9
900----	30	937	3.4	80	213	5.2
850----	30	1,399	1.3	75	235	6.0
800----	30	1,886	- .7	66	243	7.4
750----	30	2,400	- 2.9	58	251	8.7
700----	30	2,945	- 5.5	56	262	10.3
650----	30	3,519	- 8.6	51	256	11.7
600----	30	4,140	-12.2	47	254	14.2
550----	30	4,800	-16.1	40	255	17.5
500----	30	5,512	-20.7	40	258	17.9
450----	30	6,278	-25.9	40	246	16.9
400----	30	7,127	-31.8	40	249	21.2
350----	30	8,059	-38.4		253	20.6
300----	30	9,103	-45.2		252	25.8
250----	30	10,305	-50.6		256	28.8
200----	30	11,755	-51.5		254	31.7
175----	30	12,623	-51.2		252	28.6
150----	29	13,623	-51.2		251	23.7
125----	29	14,809	-51.5		256	20.8
100----	27	16,257	-51.7		251	19.4
80-----	25	17,693	-51.1		246	17.9
60-----	25	19,566	-51.0		246	13.8
50-----	25	20,753	-51.1		243	11.7
40-----	23	22,200	-50.3		242	12.2
30-----	22	24,077	-49.7		234	11.3
25-----	21	25,275	-49.0		236	9.1
20-----	20	26,750	-47.9		241	9.3
15-----	14	28,669	-46.5		239	7.2
10-----						

COLUMBIA, MO. (989 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	238	16.6	81	127	1.2
1,000--	30	141				
950----	30	585	19.9	65	209	2.1
900----	30	1,049	17.7	61	271	5.1
850----	30	1,536	15.1	58	271	8.2
800----	30	2,047	12.2	53	267	9.5
750----	30	2,582	8.8	52	270	9.3
700----	30	3,153	5.2	51	268	7.2
650----	30	3,751	2.1	44	278	9.5
600----	30	4,398	- 1.3	38	288	10.1
550----	30	5,081	- 5.1		280	8.9
500----	30	5,830	- 9.7		286	9.5
450----	30	6,629	-15.3		282	12.6
400----	30	7,517	-21.7		282	15.7
350----	30	8,486	-29.1		290	18.5
300----	30	9,570	-37.4		282	19.8
250----	30	10,804	-46.8		280	24.7
200----	30	12,258	-54.4		274	28.4
175----	30	13,107	-58.2		275	29.3
150----	30	14,070	-61.6		273	28.6
125----	30	15,191	-64.6		276	24.5
100----	30	16,551	-65.3		278	16.7
80-----	30	17,915	-63.0		277	11.3
60-----	29	19,705	-58.2		307	4.5
50-----	29	20,859	-55.8		346	3.3
40-----	28	22,286	-53.4		66	1.9
30-----	28	24,145	-51.2		62	2.5
25-----	28	25,334	-49.6		96	4.5
20-----	26	26,805	-47.6		94	5.8
15-----	18	28,711	-44.8		68	2.7
10-----						

DAYTON, OHIO (984 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	297	14.9	86	15	1.0
1,000--	30	157				
950----	30	598	17.8	73	308	1.7
900----	30	1,058	15.9	67	315	4.3
850----	30	1,542	13.5	61	306	5.1
800----	30	2,051	10.9	55	299	6.8
750----	30	2,587	8.3	50	305	7.0
700----	30	3,155	5.4	44	292	7.8
650----	30	3,756	1.8	42	289	9.1
600----	30	4,399	- 2.1	42	278	9.1
550----	30	5,079	- 5.8	36	268	11.1
500----	30	5,827	-10.3		266	14.4
450----	30	6,626	-15.8		267	16.5
400----	30	7,510	-21.9		264	17.9
350----	30	8,480	-28.8		263	20.4
300----	30	9,564	-37.2		256	19.2
250----	30	10,800	-46.9		260	24.3
200----	30	12,257	-54.4		265	31.5
175----	30	13,106	-57.7		266	32.1
150----	30	14,070	-61.5		266	30.7
125----	30	15,194	-63.5		270	24.3
100----	30	16,561	-63.7		270	17.1
80-----	30	17,933	-62.4		269	11.5
60-----	30	19,731	-57.3		287	4.1
50-----	30	20,890	-55.2		295	1.7
40-----	30	22,323	-52.9		112	1.2
30-----	29	24,191	-50.1		107	1.6
25-----	28	25,391	-48.3		69	2.7
20-----	25	26,864	-46.6		63	4.5
15-----	18	28,787	-44.4		82	7.0
10-----	7	31,545	-40.9			

DENVER, COLO. (842 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,611	11.0	62	221	3.3
1,000--	30	142				
950----	30	581				
900----	30	1,044				
850----	30	1,527				
800----	30	2,040	15.3	44	310	4.1
750----	30	2,581	13.0	41	317	5.2
700----	30	3,162	9.2	44	297	5.6
650----	30	3,767	4.5	49	293	8.2
600----	30	4,417	- .7	52	286	10.3
550----	30	5,097	- 5.9	51	279	11.7
500----	30	5,846	-11.2	44	269	13.4
450----	30	6,642	-16.5	39	265	16.7
400----	30	7,522	-23.1		268	18.5
350----	30	8,487	-30.5		265	20.8
300----	29	9,569	-39.0		265	25.8
250----	29	10,797	-47.4		270	32.4
200----	29	12,248	-54.7		271	35.0
175----	29	13,095	-58.6		273	37.9
150----	28	14,048	-62.1		273	33.4
125----	28	15,168	-64.7		276	26.8
100----	28	16,526	-65.6		279	17.9
80-----	28	17,887	-63.6		285	9.9
60-----	28	19,672	-58.7		285	4.5
50-----	27	20,822	-56.7		289	2.5
40-----	26	22,245	-54.6		346	1.6
30-----	25	24,092	-52.4		23	.6
25-----	23	25,269	-50.8		48	1.0
20-----	23	26,728	-49.0		131	.8
15-----	22	28,624	-46.8		51	2.7
10-----	11	31,324	-43.3			

DODGE CITY, KANS. (928 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	792	15.5	76	202	2.7
1,000--	30	147				
950----	30	589				
900----	30	1,051	18.4	58	204	11.1
850----	30	1,540	17.1	51	222	11.9
800----	30	2,055	14.7	45	239	7.6
750----	30	2,596	11.1	48	265	5.8
700----	30	3,170	7.0	50	286	6.0
650----	30	3,773	3.4	45	299	6.4
600----	30	4,420	- .8	40	302	6.4
550----	30	5,105	- 4.8		297	7.2
500----	30	5,853	- 9.7		290	7.6
450----	30	6,654	-15.2		295	10.1
400----	30	7,539	-21.6		290	13.0
350----	30	8,508	-29.0		288	14.4
300----	30	9,591	-37.5		281	18.5
250----	30	10,826	-46.2		279	23.7
200----	30	12,282	-54.2		283	26.4
175----	29	13,132	-58.1		285	29.7
150----	28	14,086	-62.0		282	27.4
125----	28	15,203	-65.7		287	24.1
100----	28	16,554	-66.3		291	15.5
80-----	27	17,916	-63.7		290	8.2
60-----	26	19,705	-58.5		321	2.9
50-----	25	20,856	-56.6		45	2.3
40-----	23	22,274	-54.4		57	3.5
30-----	18	24,129	-51.5		73	5.8
25-----	16	25,327	-50.0		84	6.0
20-----	12	26,792	-48.3			
15-----	9	28,703	-45.2			
10-----						

EL PASO, TEX. (885 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,197	18.3	53	23	2.5
1,000--	30	124				
950----	30	571				
900----	30	1,043				
850----	30	1,537	20.1	43	110	2.5
800----	30	2,058	17.2	44	170	4.1
750----	30	2,600	13.4	46	196	1.6
700----	30	3,182	9.4	49	328	1.2
650----	30	3,786	4.9	52	26	1.0
600----	30	4,439	.1	54	293	1.0
550----	30	5,125	- 4.7	51	316	2.1
500----	30	5,875	- 9.1	43	294	4.1
450----	30	6,680	-13.8		290	6.2
400----	30	7,570	-20.0		280	8.5
350----	30	8,547	-27.0		299	13.8
300----	29	9,637	-35.0		294	18.1
250----	29	10,884	-44.3		290	22.5
200----	29	12,346	-54.5		296	25.3
175----	29	13,190	-59.8		292	21.0
150----	29	14,141	-65.2		295	19.0
125----	29	15,238	-69.8		301	13.8
100----	29	16,559	-71.0		330	7.0
80-----	29	17,891	-67.5		70	5.8
60-----	28	19,648	-60.9		83	10.9
50-----	28	20,788	-58.7		94	13.4
40-----	27	22,201	-55.9		88	16.9
30-----	27	24,045	-52.9		89	17.3
25-----	25	25,220	-51.6		84	16.5
20-----	24	26,677	-48.5		90	17.7
15-----	21	28,591	-46.3		83	17.9
10-----	9	31,305	-40.5			

ELY, NEV. (812 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,908	8.1	54	182	7.6
1,000--	30	149				
950----	30	584				
900----	30	1,046				
850----	30	1,529				
800----	30	2,036	13.7	43	180	5.8
750----	30	2,579	12.7	36	181	5.8
700----	30	3,156	8.7	38	234	9.9
650----	30	3,760	4.3	42	241	12.0
600----	30	4,411	- 1.0	46	240	12.6
550----	30	5,089	- 5.9	44	247	11.9
500----	30	5,841	-10.6	31	258	15.0
450----	30	6,637	-16.5		262	15.7
400----	30	7,519	-22.7		261	21.0
350----	30	8,486	-29.8		257	22.7
300----	30	9,568	-38.1		260	30.3
250----	30	10,802	-46.6		259	34.8
200----	30	12,257	-54.6		259	39.8
175----	30	13,106	-58.2		260	40.2
150----	30	14,070	-61.3		262	35.6
125----	30	15,195	-64.2		265	26.8
100----	30	16,557	-65.0		269	13.8
80-----	30	17,920	-63.5		277	6.2
60-----	30	19,703	-59.2		347	1.0
50-----	30	20,851	-56.9		18	2.3
40-----	30	22,269	-54.5		17	1.4
30-----	28	24,116	-52.3		40	1.7
25-----	28	25,298	-51.0		33	1.7
20-----	26	26,752	-49.1		63	3.7
15-----	23	28,655	-46.4		64	2.3
10-----	6	31,380	-42.7			

FAIRBANKS, ALASKA (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	135	3.2	91	30	1.4
1,000--	30	81				
950----	30	496	3.4	77	201	1.0
900----	30	935	1.0	75	213	4.3
850----	30	1,393	- 1.5	73	208	6.4
800----	30	1,873	- 4.3	75	219	8.2
750----	30	2,373	- 7.3	73	225	9.7
700----	30	2,914	-10.2	73	239	13.2
650----	30	3,477	-13.3	68	243	13.6
600----	30	4,087	-17.0	66	239	16.9
550----	30	4,731	-20.9	64	240	19.2
500----	30	5,434	-25.2	60	243	21.0
450----	30	6,183	-30.2	58	245	22.0
400----	30	7,020	-36.1	55	245	24.1
350----	30	7,934	-42.7		250	25.8
300----	30	8,960	-49.3		250	29.5
250----	30	10,139	-54.4		255	24.3
200----	30	11,578	-50.9		258	26.6
175----	30	12,450	-49.8		259	22.5
150----	30	13,460	-49.5		255	21.8
125----	29	14,653	-49.3		255	18.8
100----	28	16,118	-48.8		263	18.5
80-----	27	17,581	-49.0		261	17.3
60-----	25	19,470	-49.8		261	16.7
50-----	25	20,662	-46.2		262	17.5
40-----	23	22,125	-50.2		271	15.9
30-----	23	24,004	-50.3		266	16.3
25-----	22	25,187	-50.1		272	15.5
20-----	17	26,664	-49.5		273	14.6
15-----	11	28,583	-46.9			
10-----						

FLINT, MICH. (991 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	234	13.0	93	200	1.4
1,000--	30	158				
950----	30	593	15.3	74	268	3.3
900----	30	1,052	13.7	68	293	5.4
850----	30	1,532	11.3	67	280	8.5
800----	30	2,038	9.5	53	281	11.5
750----	30	2,567	6.6	51	276	13.0
700----	30	3,136	4.0	45	272	14.2
650----	30	3,732	.5	42	274	16.1
600----	29	4,374	- 3.6	44	274	17.5
550----	29	5,052	- 7.9	39	269	20.0
500----	29	5,793	-12.1	33	267	22.0
450----	29	6,587	-17.2		272	24.9
400----	29	7,466	-23.5		270	26.4
350----	29	8,430	-30.4		267	29.9
300----	29	9,507	-38.7		269	32.6
250----	29	10,736	-47.5		267	39.2
200----	29	12,184	-55.0		266	44.1
175----	29	13,033	-57.7		271	43.7
150----	29	14,001	-59.7		268	37.5
125----	29	15,135	-61.7		268	32.4
100----	29	16,514	-62.1		271	24.7
80-----	29	17,899	-60.3		273	16.9
60-----	29	19,707	-56.7		273	9.1
50-----	29	20,866	-55.0		271	5.6
40-----	29	22,299	-52.8		296	2.9
30-----	28	24,167	-50.3		262	5.8
25-----	27	25,360	-48.7		273	6.4
20-----	23	26,829	-46.7		270	7.0
15-----	16	28,718	-44.5		277	8.9
10-----	6	31,465	-41.0			

FORT WORTH TEX. (995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	180	21.1	77	258	0.8
1,000--	29	137				
950----	29	587	22.7	62	212	5.2
900----	29	1,054	20.4	60	180	4.7
850----	29	1,546	17.2	61	171	2.3
800----	29	2,061	13.9	60	57	1.4
750----	29	2,602	10.5	57	35	3.9
700----	29	3,175	6.8	55	33	5.4
650----	29	3,778	2.7	55	27	5.6
600----	29	4,424	- .9	46	20	5.2
550----	29	5,111	- 4.6	36	8	4.1
500----	29	5,859	- 9.0		357	4.5
450----	29	6,663	-14.1		342	5.6
400----	29	7,552	-20.1		344	6.4
350----	29	8,527	-27.5		339	8.0
300----	29	9,619	-35.5		323	10.5
250----	29	10,866	-43.9		312	13.4
200----	29	12,334	-53.1		301	15.2
175----	29	13,186	-57.9		303	14.0
150----	29	14,146	-63.3		303	12.8
125----	29	15,256	-67.4		305	10.3
100----	29	16,595	-68.9		318	5.4
80-----	29	17,940	-65.9		66	2.7
60-----	28	19,714	-59.1		78	8.2
50-----	28	20,863	-57.2		81	11.5
40-----	27	22,284	-54.7		89	14.4
30-----	25	24,145	-51.4		88	15.7
25-----	25	25,333	-50.0		90	16.1
20-----	23	26,804	-47.3		89	14.6
15-----	18	28,734	-44.4		79	15.3
10-----	8	31,449	-41.5			

GLASGOW, MONT. (936 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	696	9.2	60	70	1.9
1,000--	30	143				
950----	30	571				
900----	30	1,027	13.3	50	276	3.9
850----	30	1,507	11.5	45	293	9.5
800----	30	2,011	8.4	44	298	12.4
750----	30	2,538	5.1	45	290	14.6
700----	30	3,102	1.9	41	284	18.1
650----	30	3,687	- 1.3	37	281	21.0
600----	30	4,331	- 5.5	37	282	24.9
550----	30	4,999	- 9.7	36	282	25.6
500----	30	5,738	-14.4	36	283	29.0
450----	30	6,518	-19.8	34	281	33.0
400----	30	7,392	-26.3	32	279	35.0
350----	30	8,344	-33.6		280	35.9
300----	30	9,407	-41.8		279	41.2
250----	30	10,620	-50.5		282	42.6
200----	29	12,060	-55.6		279	41.8
175----	29	12,910	-56.2		279	41.2
150----	29	13,886	-57.7		278	38.1
125----	29	15,032	-59.4		282	30.3
100----	29	16,434	-58.9		284	24.3
80-----	29	17,836	-58.0		283	17.5
60-----	29	19,658	-55.7		307	9.1
50-----	29	20,821	-55.1		322	6.4
40-----	29	22,249	-54.1		340	4.1
30-----	24	24,107	-52.4		315	6.2
25-----	24	25,290	-50.5		319	5.8
20-----	24	26,754	-48.0		290	8.0
15-----	19	28,651	-45.7		285	7.6
10-----	7	31,364	-40.9			

GRAND JUNCTION, COLO. (855 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,474	15.2	48	122	8.7
1,000--	30	116				
950----	30	562				
900----	30	1,030				
850----	30	1,520	16.2	47	124	8.9
800----	30	2,038	16.5	42	139	9.5
750----	30	2,581	13.6	42	178	4.1
700----	30	3,162	9.4	46	243	5.2
650----	30	3,770	4.5	52	253	9.1
600----	30	4,418	- .7	56	257	11.3
550----	30	5,102	- 6.0	57	257	14.2
500----	30	5,847	-11.2	54	259	15.9
450----	30	6,646	-16.3	42	265	18.5
400----	30	7,525	-22.3	33	269	22.7
350----	30	8,491	-29.8		270	24.7
300----	30	9,571	-37.9		278	30.7
250----	30	10,804	-46.5		283	36.7
200----	30	12,259	-54.2		279	38.7
175----	30	13,108	-58.1		278	37.5
150----	30	14,069	-62.4		280	35.4
125----	30	15,186	-65.4		282	27.0
100----	30	16,540	-66.2		282	16.5
80-----	30	17,899	-64.1		302	8.5
60-----	30	19,681	-59.2		348	3.3
50-----	30	20,832	-56.6		43	1.4
40-----	30	22,255	-54.5		52	2.9
30-----	26	24,102	-52.4		79	3.1
25-----	25	25,287	-50.7		81	4.1
20-----	23	26,749	-49.0		95	4.7
15-----	20	28,643	-46.4		90	2.3
10-----	13	31,305	-43.4		294	2.3

GREAT FALLS, MONT. (890 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,123	10.9	54	224	6.2
1,000--	30	139				
950----	30	576				
900----	30	1,034				
850----	30	1,512	12.4	44	238	10.3
800----	30	2,018	9.4	46	255	8.7
750----	30	2,545	5.8	50	277	9.1
700----	30	3,113	2.3	46	272	12.6
650----	30	3,703	- .8	37	265	15.9
600----	30	4,345	- 4.7	37	266	20.6
550----	30	5,016	- 9.2		273	22.0
500----	30	5,756	-14.1		268	24.9
450----	30	6,539	-19.8		265	26.8
400----	30	7,414	-26.0		266	29.3
350----	30	8,366	-33.4		265	31.3
300----	30	9,430	-41.7		264	34.2
250----	30	10,643	-50.1		264	37.1
200----	30	12,079	-55.7		263	41.8
175----	30	12,929	-56.2		268	43.5
150----	30	13,905	-57.5		267	39.6
125----	30	15,052	-59.3		272	29.9
100----	30	16,447	-59.4		277	22.7
80-----	29	17,846	-58.2		286	15.7
60-----	29	19,664	-56.4		304	7.6
50-----	29	20,824	-55.5		319	5.8
40-----	26	22,248	-54.7		313	4.5
30-----	26	24,096	-53.0		325	6.2
25-----	25	25,275	-51.8		313	6.0
20-----	25	26,729	-49.4		305	6.6
15-----	18	28,647	-45.9		273	9.7
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

SEPTEMBER 1960

Standard pressure surface (mb.)	GREEN BAY, WIS. (993 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	210	12.6	93	17	2.9
1,000	30	147				
950	30	582	13.8	80	300	1.9
900	30	1,036	12.3	76	278	6.0
850	30	1,514	10.1	69	279	9.9
800	30	2,017	8.0	56	278	12.4
750	30	2,546	5.5	48	275	14.4
700	30	3,110	2.3	47	272	17.5
650	30	3,700	-1.2	40	271	18.8
600	30	4,339	-4.6	39	273	22.0
550	30	5,010	-8.7	41	274	23.1
500	30	5,752	-13.2	39	273	24.7
450	30	6,543	-18.4		275	26.8
400	30	7,415	-24.5		277	29.0
350	30	8,375	-31.4		274	32.1
300	30	9,448	-39.5		275	35.6
250	30	10,672	-48.3		274	38.1
200	30	12,116	-55.2		271	43.7
175	29	12,953	-56.9		274	41.8
150	29	13,926	-58.5		271	39.4
125	29	15,067	-60.2		271	33.2
100	29	16,458	-60.0		274	24.1
80	28	17,852	-59.0		274	20.0
60	28	19,666	-56.3		275	10.5
50	27	20,828	-55.0		273	8.2
40	27	22,259	-53.1		272	6.4
30	26	24,124	-50.5		276	7.4
25	22	25,321	-49.2		274	7.8
20	21	26,793	-47.0		272	6.8
15	14	28,706	-44.0		273	4.5
10	5	31,529	-39.6			

Standard pressure surface (mb.)	GREENSBORO, N. C. (987 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	273	16.6	96	31	1.0
1,000	29	164				
950	29	604	18.1	77	34	1.6
900	29	1,066	16.4	70	348	1.9
850	29	1,552	14.2	66	288	2.9
800	29	2,063	11.8	61	279	4.7
750	29	2,600	9.7	50	272	5.4
700	29	3,172	6.7	49	261	6.4
650	29	3,733	3.5	45	262	7.8
600	29	4,423	.1	36	258	9.1
550	29	5,109	-3.7		247	8.7
500	29	5,862	-8.3		241	11.3
450	29	6,667	-13.7		244	12.0
400	29	7,558	-20.0		250	14.6
350	29	8,534	-27.0		256	16.7
300	29	9,628	-35.1		253	19.2
250	29	10,876	-43.9		259	23.7
200	29	12,341	-53.9		258	27.2
175	28	13,189	-58.7		262	29.1
150	28	14,146	-63.3		266	27.4
125	28	15,257	-66.6		268	20.4
100	28	16,603	-66.8		279	12.2
80	28	17,961	-63.9		302	3.9
60	28	19,749	-58.4		45	2.7
50	28	20,904	-55.4		80	6.4
40	25	22,334	-53.4		82	8.2
30	22	24,202	-50.0		93	8.9
25	19	25,409	-48.0		78	9.9
20	17	26,885	-46.4		82	10.9
15	13	28,810	-43.4		82	10.1
10	9	31,550	-38.8			

Standard pressure surface (mb.)	HILO, HAWAII (1014 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	11	21.5	89	240	5.1
1,000	30	133	22.7	81	252	3.7
950	30	583	20.0	82	76	4.5
900	30	1,045	17.0	85	76	7.2
850	30	1,532	14.4	85	73	7.0
800	30	2,044	11.9	80	75	5.6
750	30	2,589	10.5	53	85	7.0
700	30	3,158	9.4		96	7.8
650	30	3,770	6.5		96	6.6
600	30	4,423	2.9		103	5.2
550	30	5,115	-1.0		94	2.9
500	30	5,878	-5.8		141	1.6
450	30	6,690	-11.6		203	3.3
400	30	7,588	-18.5		236	6.2
350	30	8,570	-25.9		248	10.5
300	30	9,668	-34.5		255	16.9
250	30	10,916	-44.3		257	25.1
200	30	12,375	-55.7		249	31.3
175	29	13,216	-61.6		247	31.3
150	27	14,160	-67.4		251	25.5
125	19	15,249	-70.9		234	15.2
100	12	16,569	-72.7		145	4.1
80	8	17,882	-68.4			
60	8	19,627	-63.6			
50	8	20,754	-60.9			
40	7	22,156	-56.9			
30	7	23,990	-54.2			
25	7	25,165	-52.0			
20	7	26,619	-49.3			
15	6	28,517	-47.7			
10						

Standard pressure surface (mb.)	INTERNAT. FALLS, MINN. (974 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	360	7.4	84	199	1.7
1,000	30	143				
950	30	566	11.0	75	223	5.2
900	30	1,020	10.4	64	264	9.3
850	30	1,495	8.5	54	285	12.4
800	30	1,993	5.9	51	283	13.6
750	30	2,514	3.3	43	275	18.5
700	30	3,077	.4	41	277	22.9
650	30	3,662	-3.1	40	274	26.2
600	30	4,298	-6.7	40	277	29.5
550	30	4,964	-10.5	38	279	31.5
500	30	5,701	-15.1	36	276	34.4
450	30	6,482	-20.6	39	276	35.4
400	30	7,353	-26.4	43	277	41.2
350	30	8,304	-33.5	40	276	47.4
300	30	9,368	-41.4		277	49.9
250	30	10,584	-49.0		271	51.7
200	30	12,030	-54.5		274	51.5
175	30	12,882	-55.3		276	50.5
150	30	13,865	-56.2		276	48.8
125	30	15,020	-57.5		280	35.8
100	30	16,429	-57.5		282	25.6
80	30	17,843	-56.3		285	19.0
60	29	19,677	-55.0		289	12.0
50	28	20,850	-53.8		282	8.9
40	27	22,285	-52.7		297	6.8
30	27	24,146	-51.6		290	4.7
25	22	25,354	-49.6		295	5.2
20	17	26,821	-47.3		276	9.9
15	8	28,725	-44.7			
10						

Standard pressure surface (mb.)	JACKASS FLATS, NEV. (891 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,100	19.3	34	38	4.9
1,000		92				
950	30	538				
900	30	1,013				
850	30	1,511	22.7	28	150	3.9
800	30	2,035	18.9	30	188	8.0
750	30	2,577	14.8	32	197	7.4
700	30	3,164	10.1	35	189	6.6
650	30	3,768	5.2	39	172	7.2
600	30	4,423	.5	38	186	5.8
550	30	5,106	-4.0	36	222	7.4
500	30	5,862	-8.9		242	10.3
450	30	6,659	-14.6		250	13.4
400	30	7,551	-21.4		253	16.1
350	30	8,522	-28.4		254	19.2
300	30	9,609	-36.3		250	24.5
250	30	10,850	-44.8		250	30.7
200	30	12,314	-53.2		254	40.0
175	30	13,165	-57.6		257	38.5
150	30	14,128	-61.8		258	34.8
125	30	15,246	-65.4		263	28.4
100	30	16,597	-66.4		269	12.2
80	28	17,952	-65.1		267	3.5
60	27	19,730	-59.7		58	3.5
50	27	20,877	-57.3		84	4.1
40	26	22,295	-55.4		67	4.7
30	21	24,153	-53.2		90	8.5
25	20	25,331	-51.9		90	9.3
20	19	26,779	-50.1		83	8.5
15	13	28,686	-48.1		92	11.5
10						

Standard pressure surface (mb.)	JACKSON, MISS. (1004 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	101	19.7	91	31	1.7
1,000	30	127	20.4	88	36	1.9
950	30	569	21.1	73	76	6.6
900	30	1,040	18.5	73	86	4.9
850	30	1,530	15.6	71	74	4.5
800	30	2,042	12.8	66	64	4.7
750	30	2,579	9.8	60	47	5.6
700	30	3,153	6.6	56	54	7.0
650	30	3,757	3.3	49	48	6.0
600	30	4,404	.1	39	32	3.7
550	30	5,090	-3.5	32	28	1.9
500	30	5,844	-8.1	29	6	1.0
450	30	6,649	-13.4		49	2.5
400	30	7,541	-19.7		338	1.7
350	30	8,519	-27.0		312	1.4
300	30	9,613	-34.8		252	5.4
250	30	10,863	-43.6		241	9.7
200	30	12,332	-53.1		249	14.6
175	30	13,183	-58.1		251	14.2
150	29	14,149	-63.4		253	12.4
125	29	15,257	-67.8		260	10.3
100	29	16,594	-68.6		292	3.3
80	29	17,941	-65.2		62	3.3
60	28	19,715	-59.4		77	8.7
50	28	20,863	-57.0		84	13.2
40	27	22,285	-54.4		86	15.3
30	27	24,145	-50.6		89	16.1
25	27	25,337	-49.1		91	16.9
20	24	26,816	-47.0		94	17.1
15	19	28,744	-44.4		81	19.8
10	8	31,469	-39.2			

Standard pressure surface (mb.)	JACKSONVILLE, FLA. (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	22.8	95	53	4.9
1,000	30	131	23.5	86	73	7.2
950	30	577	21.4	81	87	10.5
900	30	1,047	18.6	79	98	10.9
850	30	1,537	16.0	73	103	9.7
800	30	2,051	13.3	70	99	8.2
750	30	2,590	10.6	65	101	6.0
700	30	3,164	7.7	60	115	3.5
650	30	3,766	4.2	57	136	4.3
600	30	4,421	.8	52	173	3.3
550	30	5,106	-3.3	49	169	3.5
500	30	5,864	-7.6	45	177	3.3
450	30	6,670	-12.4	41	199	3.5
400	30	7,569	-18.1	39	227	4.5
350	30	8,555	-24.7	37	245	8.4
300	30	9,659	-32.7		240	14.6
250	29	10,916	-43.0		236	21.8
200	29	12,384	-54.0		250	23.1
175	29	13,229	-59.9		252	19.6
150	29	14,179	-65.4		249	15.2
125	29	15,277	-69.8		268	7.2
100	28	16,603	-70.0		44	1.6
80	28	17,943	-65.8		84	8.2
60	28	19,715	-59.5		80	14.6
50	28	20,863	-56.9		87	18.5
40	27	22,285	-54.0		91	19.4
30	25	24,135	-51.2		94	19.8
25	25	25,323	-49.5		86	20.2
20	24	26,794	-47.2		85	23.5
15	11	28,741	-42.6			
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Standard pressure surface (mb.)	JOHNSTON IS., PACIFIC AREA (1013 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	3	26.7	78	71	13.0
1,000	30	115	25.9	77	78	13.4
950	30	566	22.6	78	90	15.5
900	30	1,036	19.4	78	93	15.7
850	30	1,527	16.5	74	88	15.0
800	30	2,042	13.9	64	85	12.8
750	30	2,578	11.6	57	83	11.7
700	30	3,159	9.0	47	89	9.5
650	30	3,763	6.0	35	96	8.0
600	30	4,422	2.2	31	103	6.0
550	30	5,112	-1.8		112	3.5
500	30	5,872	-6.3	32	132	2.3
450	30	6,675	-11.7	33	217	2.1
400	30	7,583	-17.5	32	249	5.2
350	30	8,570	-24.3		262	9.5
300	30	9,676	-32.7		271	16.7
250	30	10,935	-42.7		273	23.1
200	30	12,404	-54.8		272	30.3
175	30	13,246	-61.3		275	31.5
150	30	14,189	-67.7		272	28.2
125	29	15,272	-72.6		273	17.5
100	28	16,579	-73.7		60	1.2
80	27	17,895	-70.0		89	17.7
60	27	19,628	-63.9		91	28.6
50	25	20,750	-60.9		91	33.6
40	25	22,148	-57.5		91	39.2
30	25	23,986	-53.1		92	41.8
25	21	25,165	-50.9		92	38.9
20	20	26,626	-49.2		93	38.7
15	20	28,526	-46.0		95	39.1
10	7	31,256	-40.5			

Standard pressure surface (mb.)	KING SALMON, ALASKA (1007 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	15	6.1	88	136	2.7
1,000	30	67			178	4.7
950	30	485	5.4	73	208	5.8
900	30	929	2.7	74	235	6.6
850	30	1,390	-.2	75	236	8.0
800	30	1,673	-2.5	72	232	10.5
750	30	2,383	-4.9	69	245	11.9
700	30	2,925	-7.6	64	251	13.4
650	30	3,492	-10.5	60	256	14.0
600	30	4,112	-13.8	56	253	13.6
550	30	4,762	-17.6	50	259	16.9
500	30	5,476	-22.2	43	257	18.7
450	30	6,237	-27.3	37	259	22.0
400	30	7,083	-33.1		256	23.5
350	30	8,009	-39.7		256	25.1
300	30	9,048	-46.5		254	26.0
250	30	10,243	-51.6		261	35.2
200	30	11,690	-50.9		260	31.1
175	30	12,561	-50.3		253	28.6
150	30	13,568	-49.9		254	25.3
125	29	14,760	-49.9		248	23.9
100	28	16,217	-50.1		245	18.8
80	27	17,673	-50.2		251	17.7
60	26	19,546	-50.3		237	15.3
50	25	20,732	-50.6		242	13.8
40	23	22,187	-50.5		242	12.8
30	23	24,063	-50.0		241	12.2
25	23	25,257	-49.1		240	12.4
20	22	26,726	-48.3		252	12.8
15	20	28,623	-46.8		258	12.6
10	6	31,393	-41.8			

Standard pressure surface (mb.)	KOTZEBUE, ALASKA (1010 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	1.7	84	27	4.3
1,000	30	87	1.5	78	16	5.2
950	30	496	-.3	74	128	1.9
900	30	930	-2.7	75	220	1.4
850	30	1,382	-4.4	66	229	2.1
800	30	1,859	-6.6	58	246	2.7
750	30	2,354	-9.1	52	245	4.1
700	30	2,893	-11.9	51	252	5.4
650	30	3,450	-15.3	51	258	7.0
600	30	4,058	-19.1	48	262	8.4
550	30	4,694	-23.3	43	264	9.9
500	30	5,392	-28.0	41	264	12.4
450	30	6,131	-33.2		262	15.0
400	30	6,961	-39.1		264	16.9
350	30	7,864	-44.7		261	22.9
300	30	8,883	-50.4		251	27.6
250	30	10,062	-52.8		255	27.4
200	30	11,517	-49.0		251	23.9
175	30	12,395	-48.3		256	22.5
150	30	13,411	-48.0		254	20.2
125	30	14,614	-47.9		252	19.4
100	30	16,085	-48.2		252	18.5
80	29	17,547	-48.8		252	17.7
60	27	19,436	-49.6		252	16.7
50	27	20,628	-50.2		249	16.1
40	27	22,083	-50.4		249	16.3
30	24	23,961	-50.0		254	17.1
25	23	25,146	-50.0		256	18.3
20	23	26,607	-48.8		253	18.1
15	18	28,503	-47.4		259	20.0
10	8	31,193	-45.4			

Standard pressure surface (mb.)	LAKE CHARLES, LA. (1014 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	21.0	90	12	3.9
1,000	30	127	23.0	80	46	5.4
950	30	577	21.6	74	77	6.4
900	30	1,043	18.7	72	75	6.4
850	30	1,532	15.6	68	68	6.4
800	30	2,046	13.2	55	62	6.4
750	30	2,585	10.6	51	60	7.4
700	30	3,160	7.3	52	40	8.4
650	30	3,766	4.2	43	37	7.8
600	30	4,415	.5	37	33	6.8
550	30	5,102	-3.4	35	14	4.3
500	30	5,858	-7.8	30	343	4.1
450	30	6,668	-13.1		347	4.1
400	30	7,560	-19.2		337	5.6
350	30	8,540	-26.3		322	5.8
300	30	9,637	-34.4		305	8.9
250	30	10,890	-43.0		266	12.4
200	30	12,362	-53.1		277	15.2
175	30	13,212	-58.5		287	14.0
150	30	14,170	-63.7		294	9.3
125	29	15,279	-68.6		285	6.8
100	29	16,610	-69.6		13	2.9
80	29	17,951	-66.5		78	6.6
60	29	19,721	-60.3		79	12.8
50	28	20,868	-57.0		81	16.9
40	24	22,290	-54.3		90	19.4
30	20	24,143	-51.4		93	16.5
25	16	25,334	-49.9		93	18.5
20	13	26,784	-48.0		87	22.0
15	11	28,706	-44.5			
10	6	31,399	-41.2			

Standard pressure surface (mb.)	LANDER, WYO. (833 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,696	10.3	60	249	2.5
1,000	30	140				
950	30	576				
900	30	1,035				
850	30	1,525				
800	30	2,032	11.6	47	251	1.6
750	30	2,566	9.5	45	258	2.9
700	30	3,140	6.3	45	262	6.8
650	30	3,736	2.2	47	270	10.9
600	30	4,385	-2.3	46	272	15.5
550	30	5,061	-7.1	45	270	19.0
500	30	5,807	-12.3	43	273	19.8
450	30	6,594	-17.8	38	269	18.8
400	30	7,475	-24.1	37	270	22.0
350	30	8,436	-31.3		270	23.7
300	30	9,509	-39.8		272	28.2
250	30	10,731	-48.4		275	34.8
200	30	12,176	-55.3		276	38.9
175	29	13,027	-58.0		277	38.5
150	29	13,992	-61.0		276	37.9
125	29	15,119	-63.0		280	32.1
100	29	16,491	-62.9		282	21.8
80	29	17,867	-61.7		291	13.6
60	29	19,663	-58.3		302	7.2
50	28	20,818	-57.0		321	3.3
40	27	22,241	-54.7		316	3.3
30	26	24,087	-52.6		258	1.9
25	25	25,271	-51.1		277	6.4
20	23	26,720	-49.3		269	6.2
15	20	28,620	-47.0		281	5.6
10	[illegible]	31,310	-44.3			

Standard pressure surface (mb.)	LAS VEGAS, NEV. (937 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	660	22.4	37	230	4.9
1,000	30	83				
950	30	532				
900	30	1,011	25.8	30	225	3.5
850	30	1,511	23.0	30	242	3.3
800	30	2,034	18.9	33	221	4.7
750	30	2,578	14.4	38	205	6.8
700	30	3,162	9.5	44	191	7.4
650	30	3,765	4.7	45	189	6.6
600	30	4,419	.5	38	205	7.2
550	30	5,102	-4.0	38	228	9.3
500	30	5,857	-9.0	33	239	12.0
450	30	6,659	-14.6		249	13.8
400	30	7,547	-21.1		248	16.5
350	30	8,520	-27.8		260	20.4
300	30	9,609	-36.1		258	23.9
250	30	10,852	-44.6		253	32.3
200	30	12,316	-53.4		257	39.4
175	30	13,166	-58.1		257	40.0
150	30	14,127	-62.4		258	35.0
125	30	15,241	-66.4		260	26.6
100	30	16,584	-67.6		268	12.8
80	30	17,932	-65.4		277	2.3
60	30	19,706	-59.8		70	3.7
50	30	20,852	-56.9		80	6.6
40	29	22,272	-54.7		80	7.4
30	28	24,123	-52.1		84	9.3
25	26	25,306	-50.7		79	9.3
20	23	26,767	-48.5		89	9.7
15	14	28,689	-45.6			
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Standard pressure surface (mb.)	LIHUE, HAWAII (1012 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	36	24.2	79	51	8.9
1,000	30	138	23.6	79	57	10.7
950	30	585	20.2	82	75	13.8
900	30	1,050	16.8	84	78	14.0
850	30	1,536	13.4	85	79	13.2
800	30	2,045	11.0	75	85	11.7
750	30	2,587	10.4		98	10.5
700	30	3,156	9.0		107	7.0
650	30	3,764	5.7		114	6.2
600	30	4,417	2.0		131	4.1
550	30	5,107	-2.3		187	2.3
500	30	5,865	-7.3		228	4.1
450	30	6,673	-13.0		248	6.2
400	30	7,565	-19.5		246	9.5
350	30	8,544	-26.8		253	14.8
300	30	9,638	-35.0		263	18.5
250	30	10,884	-44.8		265	24.9
200	30	12,341	-55.7		261	30.9
175	29	13,182	-61.0		264	29.7
150	29	14,129	-65.9		264	25.6
125	27	15,227	-68.4		256	13.6
100	24	16,557	-70.5		146	1.6
80	21	17,885	-68.3		90	13.0
60	21	19,632	-62.9		92	25.1
50	21	20,762	-60.0		92	29.9
40	21	22,166	-56.3		94	35.2
30	20	24,007	-52.3		92	37.5
25	18	25,194	-51.1		93	37.5
20	16	26,651	-49.4		94	37.1
15	12	28,542	-46.4		92	34.0
10	5	31,277	-42.8			

Standard pressure surface (mb.)	LITTLE ROCK, ARK. (1007 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	79	18.7	91	325	1.7
1,000	30	140	20.0	86	345	1.4
950	30	586	21.7	66	116	1.9
900	30	1,055	19.1	62	83	1.7
850	30	1,545	16.1	61	55	3.5
800	30	2,058	13.0	59	35	5.1
750	30	2,593	9.8	56	17	5.2
700	30	3,169	6.3	54	5	6.4
650	30	3,769	3.0	49	349	5.8
600	30	4,419	-.7	46	351	4.1
550	30	5,104	-4.5	40	340	5.1
500	30	5,856	-8.8	30	336	3.1
450	30	6,663	-13.9		340	1.4
400	30	7,551	-20.3		294	4.5
350	30	8,526	-27.5		288	5.8
300	30	9,617	-35.8		271	8.5
250	30	10,861	-44.6		273	10.3
200	29	12,326	-53.3		270	19.6
175	28	13,170	-57.8		278	17.9
150	28	14,132	-62.4		278	16.7
125	28	15,247	-66.3		274	14.4
100	28	16,593	-67.3		277	8.5
80	28	17,947	-64.2		311	2.7
60	28	19,728	-58.9		82	4.1
50	28	20,879	-56.1		85	8.9
40	27	22,304	-53.5		86	9.3
30	27	24,166	-50.5		97	12.2
25	25	25,358	-49.0		101	11.1
20	24	26,828	-47.0		103	11.7
15	15	28,729	-45.0			
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

SEPTEMBER 1960

McGRATH, ALASKA (997 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	103	3.1	87	260	0.6
1,000--	30	76			288	1.9
950----	30	496	3.0	75	92	2.1
900----	30	930	.7	75	179	2.1
850----	30	1,388	- 1.9	75	206	5.1
800----	30	1,868	- 4.6	74	205	5.1
750----	30	2,376	- 7.2	71	218	6.2
700----	30	2,910	-10.1	67	212	7.0
650----	30	3,480	-13.0	64	228	7.4
600----	30	4,085	-16.4	55	241	9.5
550----	30	4,733	-20.2	50	248	8.0
500----	30	5,436	-24.6	44	245	9.3
450----	30	6,193	-29.6	45	249	12.2
400----	30	7,027	-35.4	46	250	15.5
350----	30	7,945	-41.6		253	18.8
300----	30	8,975	-48.5		252	21.6
250----	30	10,162	-52.9		259	25.3
200----	30	11,606	-50.8		260	23.5
175----	30	12,480	-49.4		258	21.6
150----	30	13,491	-49.2		253	19.6
125----	30	14,688	-48.9		256	18.7
100----	30	16,154	-49.0		254	17.1
80-----	29	17,620	-49.4		256	16.5
60-----	28	19,502	-50.0		254	14.6
50-----	28	20,693	-50.6		251	14.4
40-----	26	22,156	-50.8		251	14.8
30-----	25	24,037	-50.1		248	15.9
25-----	20	25,229	-50.0		249	15.0
20-----	14	26,696	-48.8		257	18.7
15-----	7	28,577	-47.4			
10-----						

MEDFORD, OREG. (970 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	401	11.2	76		0.0
1,000--	30	144				
950----	30	579	14.8	62	301	1.9
900----	30	1,034	15.2	55		.0
850----	30	1,518	14.1	49	122	2.7
800----	30	2,029	12.3	41	135	1.4
750----	30	2,563	9.4	37	243	3.5
700----	30	3,136	5.6	37	228	6.4
650----	30	3,730	1.7	34	236	8.7
600----	30	4,378	- 2.4	32	245	10.9
550----	30	5,055	- 6.7		256	11.5
500----	30	5,802	-11.7		262	13.4
450----	30	6,589	-17.8		268	13.8
400----	30	7,470	-24.6		262	16.1
350----	30	8,429	-31.8		258	21.0
300----	30	9,501	-40.3		257	24.1
250----	30	10,724	-48.1		256	28.0
200----	30	12,172	-54.5		256	34.0
175----	30	13,024	-56.7		254	34.0
150----	30	14,000	-58.6		257	31.7
125----	30	15,141	-60.5		257	23.7
100----	30	16,527	-61.6		259	16.9
80-----	30	17,911	-60.5		273	9.9
60-----	30	19,711	-58.1		334	3.1
50-----	29	20,860	-56.8		356	1.9
40-----	26	22,278	-55.1		343	2.3
30-----	23	24,115	-52.9		347	2.3
25-----	18	25,300	-51.5		21	2.7
20-----	16	26,750	-49.6		330	3.7
15-----	10	28,639	-47.2			
10-----						

MIAMI, FLA. (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	4	25.4	89	95	2.1
1,000--	30	113	25.4	86	111	2.3
950----	30	563	22.7	83	163	6.2
900----	30	1,032	19.8	81	174	6.2
850----	30	1,524	16.9	78	172	5.1
800----	30	2,040	14.1	72	187	5.4
750----	30	2,584	11.3	68	191	5.8
700----	30	3,159	8.3	65	191	4.3
650----	30	3,765	4.7	63	218	4.5
600----	30	4,417	1.1	58	228	3.5
550----	30	5,104	- 2.8	58	254	3.5
500----	30	5,864	- 6.9	50	311	2.5
450----	30	6,678	-11.6	43	268	4.1
400----	30	7,575	-17.0	40	243	4.9
350----	30	8,565	-23.7	34	233	4.7
300----	30	9,673	-32.0		246	6.6
250----	30	10,935	-42.3		248	8.9
200----	30	12,405	-54.5		255	9.1
175----	30	13,247	-61.1		251	8.7
150----	30	14,191	-67.2		256	5.8
125----	30	15,276	-72.2		2	2.5
100----	29	16,583	-72.3		67	9.1
80-----	29	17,907	-68.3		84	15.2
60-----	29	19,660	-62.0		84	23.1
50-----	29	20,796	-59.0		86	26.4
40-----	29	22,208	-55.3		93	30.3
30-----	26	24,062	-51.7		91	28.4
25-----	25	25,248	-49.5		91	30.3
20-----	21	26,712	-47.5		89	32.4
15-----	16	28,623	-44.5			
10-----						

MIDLAND, TEX. (918 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	871	17.3	71	100	1.0
1,000--	30	131				
950----	30	577				
900----	30	1,042	20.0	61	164	5.2
850----	30	1,535	18.7	54	180	8.7
800----	30	2,053	16.4	45	130	2.5
750----	30	2,594	12.5	46	40	3.3
700----	30	3,174	8.2	51	12	5.2
650----	30	3,777	3.8	52	359	6.4
600----	30	4,428	- .3	45	7	6.2
550----	30	5,108	- 4.9	43	4	8.0
500----	30	5,863	- 9.1	34	349	6.6
450----	30	6,666	-13.9		326	7.8
400----	30	7,558	-20.2		314	8.9
350----	30	8,533	-27.3		318	14.0
300----	30	9,627	-34.9		316	18.7
250----	30	10,876	-43.9		309	24.3
200----	30	12,343	-53.8		307	25.8
175----	30	13,192	-58.9		306	22.7
150----	30	14,148	-64.1		307	17.7
125----	30	15,251	-69.0		310	10.7
100----	30	16,580	-69.9		342	3.9
80-----	30	17,918	-66.6		85	6.6
60-----	28	19,685	-60.9		86	9.9
50-----	28	20,826	-58.1		89	14.2
40-----	28	22,242	-55.3		90	14.6
30-----	27	24,091	-51.8		87	17.9
25-----	25	25,278	-50.2		90	17.1
20-----	21	26,751	-47.7		87	15.5
15-----	17	28,666	-45.2		89	22.0
10-----						

MONTGOMERY, ALA. (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	61	21.1	87	46	4.1
1,000--	30	135	21.5	84	70	5.6
950----	30	581	21.3	76	102	8.9
900----	30	1,050	18.9	73	111	7.8
850----	30	1,540	15.9	74	125	5.2
800----	30	2,054	12.9	70	126	4.5
750----	30	2,588	10.0	63	126	4.7
700----	30	3,166	7.1	51	138	3.5
650----	30	3,771	3.9	43	162	2.7
600----	30	4,420	.6	40	175	3.9
550----	30	5,106	- 3.4	36	197	3.5
500----	30	5,863	- 7.8	34	184	3.1
450----	30	6,666	-12.9		187	3.7
400----	30	7,565	-19.1		211	4.1
350----	30	8,545	-26.1		237	4.9
300----	30	9,643	-34.0		243	8.9
250----	30	10,896	-42.8		232	16.7
200----	30	12,368	-53.1		236	20.4
175----	30	13,219	-58.4		249	17.3
150----	30	14,177	-63.4		250	15.2
125----	30	15,284	-67.8		259	10.5
100----	30	16,621	-68.6		266	4.7
80-----	30	17,965	-65.6		61	2.9
60-----	30	19,740	-59.5		72	8.0
50-----	30	20,888	-56.4		80	10.9
40-----	28	22,313	-53.8		89	12.8
30-----	27	24,171	-51.1		90	14.4
25-----	26	25,365	-49.1		88	14.8
20-----	26	26,837	-46.6		91	15.0
15-----	23	28,755	-44.0		87	16.3
10-----	7	31,476	-39.6			

NANTUCKET, MASS. (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	14	15.9	90	7	1.4
1,000--	30	162	16.1	83	359	2.1
950----	30	597	14.5	74	333	1.2
900----	30	1,055	13.4	57	262	3.3
850----	30	1,536	11.9	50	266	5.4
800----	30	2,043	10.4	42	276	8.0
750----	30	2,574	7.9	46	275	9.5
700----	30	3,145	5.2	45	271	11.3
650----	30	3,741	1.7	38	268	14.6
600----	30	4,389	- 1.6	37	266	17.3
550----	30	5,067	- 5.7	36	277	21.0
500----	30	5,819	-10.1		264	18.5
450----	30	6,615	-15.5		263	19.6
400----	30	7,502	-21.9		261	22.0
350----	30	8,471	-29.1		265	24.5
300----	30	9,554	-37.4		267	26.8
250----	30	10,788	-46.9		271	28.8
200----	30	12,236	-56.2		279	34.6
175----	30	13,078	-59.1		283	32.3
150----	30	14,039	-61.5		275	28.4
125----	29	15,163	-63.2		269	25.6
100----	29	16,534	-63.1		271	17.5
80-----	29	17,914	-60.9		266	11.3
60-----	29	19,721	-56.8		275	6.0
50-----	29	20,882	-54.9		263	3.1
40-----	29	22,316	-52.9		254	.8
30-----	27	24,190	-50.3		76	2.9
25-----	26	25,384	-48.4		55	3.3
20-----	26	26,861	-46.1		70	5.4
15-----	18	28,765	-43.8		58	6.6
10-----	6	31,421	-40.1			

NASHVILLE, TENN. (996 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	177	17.7	95		0.0
1,000--	30	144				
950----	30	584	19.8	69	166	2.1
900----	30	1,052	17.2	68		.0
850----	30	1,538	14.6	64	12	2.7
800----	30	2,049	11.9	61	16	3.1
750----	30	2,583	9.2	55	346	2.1
700----	30	3,157	5.6	57	314	2.7
650----	30	3,756	2.0	54	284	3.7
600----	30	4,402	- 1.2	47	270	5.8
550----	30	5,086	- 4.9	41	255	6.8
500----	30	5,836	- 9.2		267	8.4
450----	30	6,640	-13.8		279	8.9
400----	30	7,526	-20.9		277	9.5
350----	30	8,500	-28.0		261	9.9
300----	30	9,589	-36.3		264	12.8
250----	30	10,831	-41.8		262	17.9
200----	30	12,292	-54.3		259	21.2
175----	30	13,139	-58.8		259	21.8
150----	30	14,097	-63.1		265	19.2
125----	29	15,211	-66.8		268	14.8
100----	29	16,556	-67.2		273	9.1
80-----	29	17,910	-64.2		289	3.9
60-----	29	19,693	-58.6		53	3.7
50-----	29	20,843	-56.5		69	5.8
40-----	29	22,267	-54.1		81	7.0
30-----	27	24,128	-51.1		86	8.5
25-----	24	25,310	-49.6		80	9.5
20-----	24	26,776	-47.5		84	11.9
15-----	17	28,706	-44.7		79	10.1
10-----	10	31,409	-42.7			

N. Y. INT. AP, IDLEWILD (1019 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	16.4	86	342	3.7
1,000--	30	164	16.5	80	8	4.7
950----	30	602	15.1	72	37	2.7
900----	30	1,058	13.4	70	281	2.1
850----	30	1,538	12.0	62	275	4.5
800----	30	2,045	10.3	55	273	6.6
750----	30	2,578	8.1	49	270	8.4
700----	30	3,147	5.3	43	271	10.3
650----	30	3,748	2.1	44	265	13.2
600----	30	4,391	- 1.3	42	266	16.1
550----	30	5,073	- 5.6	35	266	17.3
500----	30	5,821	-10.0		261	18.7
450----	30	6,621	-15.5		268	21.2
400----	30	7,505	-21.7		268	22.2
350----	30	8,474	-29.2		266	23.5
300----	30	9,558	-37.1		264	27.2
250----	30	10,794	-46.4		267	33.2
200----	30	12,244	-55.8		272	37.1
175----	30	13,087	-59.4		274	39.2
150----	30	14,048	-61.5		276	34.8
125----	30	15,172	-63.8		274	27.6
100----	29	16,539	-63.3		272	19.2
80-----	28	17,915	-60.9		271	11.7
60-----	28	19,721	-56.9		277	4.5
50-----	27	20,880	-55.1		273	2.7
40-----	27	22,314	-52.6		353	1.7
30-----	25	24,175	-50.3		66	2.1
25-----	22	25,365	-48.7		50	2.1
20-----	17	26,822	-46.9		62	4.5
15-----	10	28,728	-43.7			
10-----						

NOME, ALASKA (1010 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	7	2.1	80	14	2.3
1,000--	30	83	3.0	73	20	3.9
950----	30	499	1.3	73	79	1.4
900----	30	931	- 1.3	72	216	1.4
850----	30	1,386	- 3.0	59	260	1.9
800----	30	1,864	- 5.0	53	292	2.3
750----	30	2,372	- 7.7	50	284	3.9
700----	30	2,904	-10.5	46	286	5.8
650----	30	3,471	-13.6	45	289	7.6
600----	30	4,076	-17.3	44	286	9.3
550----	30	4,721	-21.5	43	294	11.7
500----	30	5,421	-26.0	44	285	13.8
450----	30	6,170	-31.4	46	283	15.0
400----	30	7,001	-36.9	47	274	18.1
350----	30	7,912	-43.1		266	22.0
300----	30	8,936	-50.0		274	25.1
250----	30	10,116	-53.5		268	24.3
200----	30	11,561	-50.1		268	23.5
175----	30	12,436	-49.1		266	20.2
150----	30	13,449	-48.8		254	18.7
125----	30	14,647	-48.9		258	17.9
100----	29	16,120	-48.6		258	16.9
80-----	29	17,579	-49.0		258	17.7
60-----	29	19,466	-49.7		256	15.2
50-----	29	20,657	-50.4		252	16.9
40-----	28	22,120	-50.2		251	16.3
30-----	28	24,000	-49.9		256	16.5
25-----	27	25,196	-49.6		255	16.7
20-----	27	26,660	-48.3		260	17.1
15-----	23	28,561	-46.9		253	20.2
10-----	10	31,309	-44.3			

NORFOLK, VA. (1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	9	20.0	82	42	3.3
1,000--	30	150	20.1	80	44	3.1
950----	30	590	18.0	79	14	4.9
900----	30	1,053	15.5	73	17	4.3
850----	30	1,538	14.0	58	343	3.5
800----	30	2,048	12.0	50	298	4.7
750----	30	2,583	9.7	45	295	6.6
700----	30	3,156	6.9	40	283	7.6
650----	30	3,759	3.9		277	8.7
600----	30	4,408	.4	34	272	9.3
550----	30	5,095	- 3.5		269	10.3
500----	30	5,848	- 8.2		264	11.9
450----	30	6,652	-13.9		257	11.1
400----	30	7,543	-20.4		258	11.3
350----	30	8,518	-27.2		265	14.2
300----	30	9,609	-35.5		271	16.7
250----	30	10,853	-44.7		271	20.0
200----	30	12,314	-54.3		271	27.8
175----	30	13,161	-58.9		273	26.8
150----	30	14,118	-63.3		276	25.8
125----	30	15,229	-66.4		276	20.8
100----	30	16,579	-66.3		274	12.2
80-----	30	17,942	-62.7		279	5.8
60-----	29	19,738	-57.6		41	1.4
50-----	29	20,896	-55.3		72	6.0
40-----	27	22,328	-52.7		81	7.4
30-----	25	24,197	-50.0		93	8.5
25-----	23	25,389	-48.1		89	9.3
20-----	19	26,868	-46.3		80	9.9
15-----	16	28,795	-42.9		68	9.1
10-----						

NORTH PLATTE, NEBR. (920 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	848	12.2	79	145	1.0
1,000--	30	137				
950----	30	572				
900----	30	1,030	15.0	68	166	3.9
850----	30	1,515	15.7	56	225	8.2
800----	30	2,029	13.9	49	250	8.4
750----	30	2,569	10.8	47	268	8.7
700----	30	3,144	7.0	47	289	8.7
650----	29	3,743	2.6	46	293	11.5
600----	29	4,392	- 1.5	39	295	13.4
550----	29	5,074	- 6.0	37	296	17.7
500----	29	5,822	-10.8		291	17.5
450----	29	6,618	-16.2		283	20.4
400----	29	7,502	-22.6	31	277	22.0
350----	29	8,467	-30.0		269	24.7
300----	29	9,546	-38.5		269	26.6
250----	29	10,775	-47.7		272	28.4
200----	29	12,223	-55.1		274	29.1
175----	29	13,070	-58.3		277	33.2
150----	29	14,034	-61.0		275	33.8
125----	29	15,159	-63.9		282	27.2
100----	29	16,523	-64.5		283	19.8
80-----	29	17,892	-62.6		279	10.5
60-----	28	19,692	-58.0		291	5.6
50-----	28	20,847	-55.7		332	3.3
40-----	28	22,274	-53.6		345	2.5
30-----	28	24,134	-51.4		292	.6
25-----	28	25,322	-49.5		285	.6
20-----	22	26,792	-47.9		27	.8
15-----	20	28,693	-45.7			.0
10-----	7	31,440	-41.4			

OAKLAND, CALIF. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	13.4	84	317	3.1
1,000--	30	118	13.4	81	290	2.3
950----	30	556	17.2	54	285	4.5
900----	30	1,015	20.1	24	303	4.1
850----	30	1,506	18.8	22	245	3.7
800----	30	2,024	15.8	21	215	4.1
750----	30	2,565	12.4		223	5.6
700----	30	3,143	8.7		220	8.2
650----	30	3,743	4.6		218	8.5
600----	30	4,398	.4		233	9.3
550----	30	5,079	- 4.1		244	11.9
500----	30	5,835	- 9.6		252	14.8
450----	30	6,628	-15.5		250	17.1
400----	30	7,519	-22.3		250	18.8
350----	30	8,486	-29.7		250	22.5
300----	30	9,568	-37.6		253	26.2
250----	30	10,803	-46.4		247	33.8
200----	30	12,259	-54.3		249	36.7
175----	30	13,108	-57.6		250	36.5
150----	30	14,076	-60.8		250	34.2
125----	30	15,201	-63.8		254	27.4
100----	29	16,567	-65.4		254	14.4
80-----	28	17,928	-64.0		277	3.1
60-----	28	19,711	-59.3		62	3.9
50-----	28	20,858	-57.2		77	3.7
40-----	27	22,275	-55.4		65	5.2
30-----	27	24,121	-52.6		72	6.8
25-----	26	25,302	-50.8		93	5.8
20-----	19	26,767	-48.7		81	5.2
15-----	14	28,671	-46.4		76	4.1
10-----						

OKLAHOMA CITY, OKLA. (972 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	392	18.3	84	144	3.1
1,000--	30	142				
950----	30	588	21.0	67	161	7.6
900----	30	1,053	19.8	59	196	9.5
850----	30	1,544	17.3	57	224	6.6
800----	30	2,059	13.8	60	248	4.3
750----	30	2,596	10.2	60	280	3.3
700----	30	3,171	6.5	56	294	4.1
650----	30	3,773	3.0	47	285	4.7
600----	30	4,421	- .6	40	297	4.7
550----	30	5,103	- 4.8	38	313	4.5
500----	30	5,855	- 9.4		297	4.9
450----	30	6,657	-14.6		302	6.4
400----	30	7,544	-21.0		293	6.8
350----	29	8,519	-28.0		288	8.9
300----	29	9,608	-36.3		284	9.9
250----	29	10,849	-45.3		282	14.4
200----	28	12,310	-53.8		286	17.9
175----	28	13,160	-58.4		288	18.8
150----	28	14,120	-62.8		286	19.8
125----	28	15,232	-66.6		290	16.1
100----	27	16,577	-67.4		295	9.5
80-----	27	17,928	-64.8		283	2.9
60-----	24	19,706	-59.4		84	5.1
50-----	24	20,854	-56.8		89	7.4
40-----	24	22,275	-54.6		82	9.3
30-----	23	24,126	-52.1		82	12.0
25-----	23	25,311	-50.3		84	11.9
20-----	20	26,779	-47.4		97	9.9
15-----	12	28,684	-44.9		85	8.9
10-----						

OMAHA, NEBR. (970 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	403	14.4	87	106	0.6
1,000--	30	143				
950----	30	585	16.7	69	185	2.5
900----	30	1,041	16.5	58	229	6.6
850----	30	1,526	14.3	54	271	8.5
800----	30	2,037	11.6	54	272	9.3
750----	30	2,571	8.7	51	268	9.7
700----	30	3,142	5.2	50	275	11.3
650----	30	3,741	1.7	45	279	10.7
600----	30	4,386	- 1.8	42	276	12.6
550----	30	5,067	- 6.0	38	276	13.4
500----	30	5,814	-10.5		273	15.3
450----	30	6,613	-16.1		274	14.6
400----	30	7,495	-22.6		276	17.5
350----	30	8,461	-29.9		278	19.4
300----	30	9,540	-38.5		278	23.1
250----	30	10,768	-47.5		279	27.0
200----	30	12,214	-55.2		279	31.5
175----	30	13,061	-57.9		278	32.6
150----	29	14,028	-60.2		280	30.5
125----	29	15,157	-63.6		278	25.5
100----	29	16,526	-63.7		279	19.4
80-----	29	17,899	-61.6		279	12.0
60-----	29	19,700	-57.4		286	7.2
50-----	28	20,857	-55.4		285	4.9
40-----	24	22,275	-53.0		290	4.3
30-----	23	24,141	-50.3		293	2.7
25-----	22	25,332	-49.2		307	2.5
20-----	18	26,813	-47.1		288	1.9
15-----	15	28,732	-44.9		234	3.3
10-----						

PEORIA, ILL. (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	201	15.5	91	14	1.2
1,000--	28	151				
950----	28	589	18.2	68	281	2.5
900----	28	1,053	15.7	67	277	4.7
850----	28	1,537	13.2	62	285	6.2
800----	28	2,045	10.8	50	277	9.3
750----	28	2,581	7.9	46	269	10.5
700----	28	3,148	4.5	44	274	12.0
650----	28	3,742	.9	44	273	12.2
600----	28	4,388	- 2.4	36	274	13.6
550----	28	5,067	- 5.8		275	14.4
500----	28	5,816	-10.5		281	17.3
450----	28	6,609	-15.9		282	18.3
400----	28	7,497	-22.2		280	19.4
350----	28	8,465	-29.3		280	22.5
300----	28	9,546	-37.9		279	23.9
250----	28	10,778	-46.7		271	28.8
200----	28	12,230	-54.0		264	33.6
175----	28	13,081	-57.5		266	31.5
150----	28	14,048	-60.1		269	31.9
125----	28	15,177	-63.0		270	25.5
100----	27	16,549	-63.1		268	21.2
80-----	27	17,924	-61.6		272	13.6
60-----	27	19,724	-57.3		288	5.6
50-----	27	20,880	-55.3		287	3.5
40-----	26	22,308	-52.7		279	2.1
30-----	25	24,173	-50.3		284	1.0
25-----	25	25,366	-48.9		164	1.0
20-----	21	26,838	-46.7		85	1.7
15-----	18	28,748	-44.3		110	1.2
10-----	11	31,511	-39.6			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

SEPTEMBER 1960

PITTSBURGH, PA.
(978 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	353	14.3	90	73	1.2
1,000--	30	163				
950----	30	597	16.3	76	230	1.7
900----	30	1,058	14.5	75	276	4.9
850----	30	1,540	12.1	68	281	5.2
800----	30	2,047	10.0	56	287	6.2
750----	30	2,581	7.5	50	283	6.6
700----	30	3,148	4.6	46	276	9.3
650----	30	3,745	1.5	38	275	11.9
600----	30	4,391	- 1.8	34	271	12.6
550----	30	5,071	- 5.9	35	266	16.5
500----	30	5,819	-10.5		266	17.9
450----	30	6,620	-15.9		264	19.6
400----	30	7,502	-22.4		263	22.2
350----	30	8,470	-29.3		253	27.0
300----	30	9,554	-37.5		255	29.0
250----	30	10,788	-46.5		256	33.0
200----	30	12,239	-55.5		264	44.1
175----	30	13,084	-58.4		264	41.0
150----	30	14,047	-61.4		265	37.3
125----	30	15,170	-64.1		266	30.9
100----	30	16,537	-63.8		266	22.5
80-----	30	17,911	-61.9		276	13.4
60-----	30	19,712	-57.4		275	4.5
50-----	30	20,872	-54.9		265	2.7
40-----	29	22,307	-53.1		342	1.0
30-----	28	24,176	-50.0		70	1.7
25-----	27	25,380	-48.1		74	4.1
20-----	23	26,851	-46.7		66	6.2
15-----	20	28,784	-43.9		76	8.5
10-----	16	31,558	-39.8		85	12.0
7------						

POINT ARGUELLO, CALIF.
(1000 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	113	12.0	93	4	1.2
1,000--	30	116			1	1.4
950----	30	562	17.3	52	10	3.7
900----	30	1,016	22.1	26	63	1.4
850----	30	1,510	20.0	22	218	1.4
800----	30	2,029	17.0		212	2.9
750----	30	2,573	13.6		206	4.5
700----	30	3,152	9.9		197	6.6
650----	30	3,760	5.7		203	6.4
600----	30	4,412	1.3		220	5.4
550----	30	5,100	- 3.0		242	6.6
500----	30	5,854	- 8.2		256	7.8
450----	30	6,659	-14.2		257	9.5
400----	30	7,546	-20.9		253	13.2
350----	30	8,519	-28.2		253	18.5
300----	30	9,607	-36.2		252	23.7
250----	30	10,848	-45.1		251	30.3
200----	30	12,310	-53.4		247	42.0
175----	30	13,161	-57.9		248	42.6
150----	30	14,121	-62.5		246	37.5
125----	30	15,234	-66.5		248	27.6
100----	30	16,576	-68.0		251	10.7
80-----	30	17,922	-65.7		248	.6
60-----	28	19,691	-59.7		86	6.4
50-----	28	20,837	-57.4		85	7.2
40-----	28	22,254	-55.0		83	8.4
30-----	27	24,102	-52.5		83	12.2
25-----	27	25,284	-51.1		88	12.4
20-----	27	26,741	-49.0		89	12.2
15-----	27	28,640	-46.2		91	11.7
10-----	27	31,353	-43.1		87	14.6
7------	14	33,793	-38.1		88	15.7

PORTLAND, ME.
(1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	20	12.0	87	309	3.3
1,000--	30	162	12.9	77	324	3.9
950----	30	592	12.7	66	314	4.3
900----	30	1,048	11.6	60	299	5.2
850----	30	1,525	10.2	53	280	9.1
800----	30	2,028	8.5	43	294	13.2
750----	30	2,556	6.1	38	271	15.0
700----	30	3,122	3.4	37	269	16.9
650----	30	3,715	.0	35	270	19.2
600----	30	4,357	- 3.4	32	267	22.3
550----	30	5,031	- 7.2		267	25.1
500----	30	5,778	-11.8		265	27.6
450----	30	6,568	-17.3		265	30.9
400----	30	7,451	-23.2		266	33.8
350----	30	8,415	-30.3		263	35.6
300----	30	9,495	-38.0		267	38.7
250----	30	10,727	-47.2		265	43.5
200----	30	12,172	-55.9		268	45.5
175----	30	13,017	-58.4		271	44.5
150----	30	13,983	-60.2		269	38.1
125----	30	15,116	-61.2		265	33.2
100----	30	16,501	-61.1		270	23.3
80-----	30	17,892	-59.3		266	14.2
60-----	30	19,708	-56.1		262	7.4
50-----	30	20,872	-54.3		256	4.3
40-----	30	22,309	-52.7		270	4.3
30-----	27	24,178	-50.3		280	3.3
25-----	26	25,372	-49.0		272	2.1
20-----	23	26,841	-46.8		280	3.9
15-----	18	28,771	-43.2		299	3.3
10-----						
7------						

RAPID CITY, S. DAK.
(907 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	966	11.8	58	341	4.7
1,000--	30	138				
950----	30	574				
900----	30	1,032	13.1	54	337	5.2
850----	30	1,515	14.5	46	301	5.6
800----	30	2,026	12.1	47	300	7.0
750----	30	2,558	9.1	50	284	8.7
700----	30	3,134	5.8	45	292	13.4
650----	30	3,730	1.7	46	282	15.9
600----	30	4,377	- 2.7	44	282	17.9
550----	30	5,053	- 7.3	44	282	21.0
500----	30	5,798	-12.4	41	283	22.3
450----	30	6,589	-18.0	38	279	25.5
400----	30	7,466	-24.4	35	276	26.8
350----	30	8,425	-31.9		274	29.3
300----	30	9,496	-40.1		275	29.9
250----	29	10,707	-49.0		270	32.3
200----	29	12,147	-55.6		275	37.3
175----	29	12,994	-57.8		274	37.5
150----	29	13,961	-60.1		274	38.1
125----	29	15,094	-61.9		275	31.5
100----	29	16,471	-62.2		279	22.7
80-----	28	17,855	-60.6		280	14.6
60-----	28	19,659	-57.2		296	9.3
50-----	28	20,816	-56.1		296	6.6
40-----	27	22,240	-54.5		288	5.6
30-----	26	24,092	-52.2		295	6.2
25-----	25	25,277	-50.6		286	5.8
20-----	24	26,743	-48.6		278	6.6
15-----	22	28,660	-45.9		266	3.5
10-----	13	31,413	-41.5			
7------						

ST. CLOUD, MINN.
(980 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	316	11.7	90	6	1.0
1,000--	30	147				
950----	30	580	13.4	77	298	1.7
900----	30	1,034	12.8	68	274	5.6
850----	30	1,513	10.6	63	283	8.9
800----	30	2,017	8.6	48	281	10.3
750----	30	2,548	6.3	45	273	13.0
700----	30	3,111	2.6	45	274	16.3
650----	30	3,703	- .8	50	274	17.9
600----	30	4,342	- 4.6	49	273	19.4
550----	30	5,015	- 8.8	48	282	24.1
500----	30	5,755	-13.5	45	282	28.0
450----	30	6,544	-18.6	35	281	31.7
400----	30	7,418	-25.0		281	36.1
350----	30	8,374	-31.9		280	37.7
300----	30	9,445	-40.3		282	41.0
250----	30	10,666	-49.0		276	45.1
200----	30	12,106	-55.6		277	46.0
175----	30	12,953	-57.2		280	43.5
150----	30	13,925	-58.8		278	41.2
125----	30	15,065	-60.5		282	35.4
100----	30	16,453	-60.4		277	25.8
80-----	30	17,846	-59.3		281	17.3
60-----	30	19,662	-56.3		290	8.4
50-----	29	20,816	-54.9		284	7.4
40-----	29	22,247	-53.5		295	6.6
30-----	27	24,103	-51.1		280	6.8
25-----	26	25,288	-49.0		277	9.3
20-----	22	26,774	-46.7		278	9.1
15-----	16	28,689	-44.8		261	7.8
10-----	5	31,452	-39.5			
7------						

ST. PAUL IS., ALASKA
(1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	10	5.9	90	11	4.5
1,000--	28	80			356	4.3
950----	28	495	3.5	88	3	8.4
900----	28	936	1.6	83	360	8.4
850----	28	1,395	- .1	72	355	8.9
800----	28	1,879	- 2.0	65	345	8.4
750----	28	2,389	- 4.1	62	318	8.2
700----	28	2,933	- 6.7	59	310	8.7
650----	28	3,504	- 9.6	52	296	11.1
600----	28	4,123	-13.2	47	291	11.9
550----	28	4,772	-17.4	50	287	13.2
500----	28	5,488	-21.8	49	285	17.3
450----	28	6,246	-27.2	49	283	20.0
400----	28	7,095	-32.9	48	278	23.5
350----	28	8,022	-39.4		285	24.9
300----	28	9,062	-46.3		278	27.0
250----	28	10,255	-52.6		289	26.2
200----	27	11,697	-51.5		285	28.0
175----	27	12,566	-50.7		282	26.4
150----	27	13,571	-50.5		281	24.5
125----	27	14,760	-50.5		279	21.4
100----	27	16,216	-50.4		269	18.5
80-----	27	17,670	-50.5		266	15.3
60-----	27	19,541	-51.4		260	12.4
50-----	27	20,725	-51.2		259	11.5
40-----	27	22,175	-51.0		256	10.7
30-----	25	24,051	-49.9		242	9.9
25-----	24	25,238	-48.7		256	10.5
20-----	22	26,717	-47.0		258	8.7
15-----	16	28,629	-45.0		248	15.2
10-----	6	31,370	-41.8			

SALEM, OREG.
(1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	61	10.5	88	309	0.6
1,000--	30	153	12.4	81	13	2.1
950----	30	587	13.1	68	21	7.0
900----	30	1,040	13.4	55	18	5.2
850----	30	1,521	12.3	45	351	2.7
800----	30	2,027	9.9	36	295	3.1
750----	30	2,558	7.1	31	273	4.9
700----	30	3,124	4.1	30	262	7.6
650----	30	3,715	.5		263	10.9
600----	30	4,361	- 3.5	33	261	13.8
550----	30	5,035	- 7.8		258	15.3
500----	30	5,778	-13.0		262	18.7
450----	30	6,566	-18.9		259	22.5
400----	30	7,438	-25.6		261	24.5
350----	30	8,393	-32.7		258	27.6
300----	30	9,459	-41.0		262	24.5
250----	30	10,676	-49.1		262	33.2
200----	30	12,120	-54.8		270	40.2
175----	30	12,972	-55.9		268	40.0
150----	30	13,949	-57.5		266	35.6
125----	30	15,096	-59.2		268	29.5
100----	30	16,492	-59.4		269	20.6
80-----	30	17,889	-59.2		282	11.9
60-----	30	19,700	-57.5		321	5.1
50-----	29	20,853	-56.2		346	3.9
40-----	29	22,275	-54.6		14	4.7
30-----	29	24,122	-52.9		357	4.7
25-----	28	25,303	-51.6		347	4.7
20-----	26	26,760	-49.6		328	3.7
15-----	23	28,660	-46.6		278	5.1
10-----	7	31,478	-42.1			

SALT LAKE CITY, UTAH
(873 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,288	13.8	64	150	7.2
1,000--	30	127				
950----	30	563				
900----	30	1,027				
850----	30	1,518	18.5	40	159	8.5
800----	30	2,037	16.6	35	177	7.4
750----	30	2,578	12.8	37	202	6.0
700----	30	3,158	8.3	41	236	7.4
650----	30	3,762	3.5	46	250	9.5
600----	30	4,411	- 1.3	50	258	12.8
550----	30	5,091	- 6.3	50	255	16.5
500----	30	5,839	-11.5	43	258	17.5
450----	30	6,636	-16.8	38	260	17.9
400----	30	7,516	-23.0	37	258	19.4
350----	30	8,481	-30.4		259	25.1
300----	30	9,560	-38.3		263	27.0
250----	30	10,791	-46.9		266	35.2
200----	30	12,245	-54.3		265	39.1
175----	30	13,095	-57.5		267	38.5
150----	30	14,061	-61.2		266	33.8
125----	30	15,186	-63.5		267	29.5
100----	30	16,555	-64.1		268	20.4
80-----	30	17,923	-63.1		285	9.7
60-----	30	19,710	-58.6		326	3.3
50-----	30	20,860	-56.5		344	2.1
40-----	30	22,281	-54.7		332	1.6
30-----	29	24,131	-52.5		337	1.6
25-----	28	25,314	-51.0		284	1.6
20-----	27	26,767	-49.3		331	1.4
15-----	22	28,667	-46.6		314	1.7
10-----						

SAN ANTONIO, TEX.
(988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	243	19.9	89	338	5.1
1,000--	30	133				
950----	30	581	21.9	76	93	1.9
900----	30	1,049	19.8	68	109	4.5
850----	30	1,540	17.4	60	100	3.9
800----	30	2,056	14.5	56	79	4.9
750----	30	2,596	11.3	53	51	8.4
700----	30	3,173	7.9	47	47	10.3
650----	30	3,774	4.3	44	41	10.9
600----	30	4,429	.9	37	31	9.1
550----	30	5,118	- 3.1	32	14	8.9
500----	30	5,873	- 7.6		7	7.0
450----	30	6,679	-12.7		333	8.4
400----	30	7,576	-19.0		320	7.4
350----	30	8,557	-25.9		310	8.2
300----	30	9,655	-34.1		318	10.7
250----	30	10,909	-43.0		316	15.0
200----	30	12,381	-53.3		299	16.3
175----	30	13,231	-58.4		312	14.4
150----	30	14,189	-63.6		325	14.4
125----	30	15,294	-68.6		314	8.0
100----	30	16,623	-70.3		353	3.3
80-----	30	17,958	-67.1		59	8.2
60-----	30	19,720	-60.6		88	12.4
50-----	30	20,863	-57.4		88	16.9
40-----	30	22,282	-54.1		87	20.2
30-----	29	24,141	-50.9		90	22.0
25-----	29	25,332	-49.0		88	23.1
20-----	29	26,802	-47.3		90	22.7
15-----	25	28,706	-45.7		92	22.9
10-----	14	31,424	-42.3			

SAN DIEGO, CALIF.
(997 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	124	17.8	90	330	1.9
1,000--	30	100				
950----	30	542	22.2	50	36	1.2
900----	30	1,012	22.9	33	307	1.0
850----	30	1,509	21.0	32	242	2.5
800----	30	2,031	17.6	38	219	2.5
750----	30	2,571	13.9	40	210	3.9
700----	30	3,158	9.7	40	206	4.3
650----	30	3,761	5.4	41	208	5.1
600----	30	4,421	1.8	34	222	6.6
550----	30	5,108	- 2.7	30	233	8.4
500----	30	5,868	- 7.7		234	11.5
450----	30	6,672	-13.5		230	13.8
400----	30	7,569	-19.7		238	17.3
350----	30	8,547	-26.4		246	21.6
300----	30	9,645	-34.4		246	27.2
250----	30	10,897	-43.4		251	31.9
200----	30	12,368	-53.1		255	38.9
175----	30	13,219	-58.4		256	36.9
150----	30	14,176	-64.0		254	32.1
125----	30	15,281	-68.7		253	20.6
100----	30	16,609	-69.8		267	6.6
80-----	30	17,945	-67.2		70	2.9
60-----	30	19,711	-60.0		91	9.3
50-----	30	20,857	-57.5		88	11.1
40-----	29	22,275	-55.4		88	14.4
30-----	29	24,119	-52.9		88	15.7
25-----	29	25,300	-51.0		93	15.3
20-----	28	26,761	-49.0		88	16.5
15-----	24	28,657	-46.6		88	18.3
10-----	10	31,353	-43.6			

SAN JUAN, P. R.
(1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	24.8	86	156	2.5
1,000--	30	122	25.0	77	127	5.1
950----	30	578	22.6	74	104	9.1
900----	30	1,042	19.8	71	107	8.2
850----	30	1,534	17.0	68	106	8.7
800----	30	2,049	14.2	62	98	7.4
750----	30	2,590	11.4	54	100	7.4
700----	30	3,166	8.1	50	107	6.6
650----	30	3,771	4.3	48	108	5.6
600----	30	4,423	1.0	49	109	3.5
550----	30	5,110	- 2.8	46	116	1.7
500----	30	5,868	- 7.3	46	80	2.9
450----	30	6,673	-12.3	42	83	3.3
400----	30	7,574	-17.9	36	59	5.4
350----	30	8,558	-24.9	31	50	7.0
300----	30	9,660	-33.3		30	9.1
250----	30	10,913	-43.4		29	10.1
200----	30	12,375	-55.6		30	15.5
175----	30	13,213	-61.6		19	15.5
150----	28	14,158	-67.0		26	11.9
125----	27	15,246	-71.2		48	11.5
100----	26	16,560	-72.6		72	12.4
80-----	24	17,880	-68.3		75	21.2
60-----	24	19,630	-62.2		83	30.5
50-----	24	20,765	-58.9		89	35.0
40-----	23	22,172	-55.7		96	32.3
30-----	21	24,026	-51.2		93	38.9
25-----	18	25,210	-49.1		92	39.2
20-----	16	26,697	-46.1		90	35.4
15-----	8	28,605	-43.6			
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SANTA MONICA, CALIF.
(1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	38	17.9	83	37	1.4
1,000--	30	107	17.9	80	59	1.2
950----	30	554	21.4	49	85	2.7
900----	30	1,019	22.2	32	211	2.9
850----	30	1,515	20.7	26	211	3.3
800----	30	2,035	17.3	32	219	4.9
750----	30	2,577	13.6	32	199	5.2
700----	30	3,160	9.5	34	193	5.2
650----	30	3,766	5.4	32	199	5.4
600----	30	4,421	1.2		219	7.0
550----	30	5,111	- 3.5		236	8.9
500----	30	5,863	- 8.3		241	11.3
450----	30	6,668	-14.1		240	12.2
400----	30	7,558	-20.5		242	15.0
350----	30	8,533	-27.5		248	19.8
300----	30	9,624	-35.4		246	25.1
250----	30	10,871	-44.0		244	32.8
200----	30	12,339	-53.1		249	40.6
175----	30	13,189	-58.5		247	39.6
150----	30	14,146	-63.7		249	34.8
125----	30	15,253	-68.0		249	25.1
100----	29	16,585	-69.1		264	10.3
80-----	29	17,925	-66.4		230	.8
60-----	29	19,695	-60.1		89	7.8
50-----	29	20,839	-57.6		82	10.1
40-----	29	22,254	-55.3		84	10.3
30-----	29	24,100	-52.6		86	13.4
25-----	28	25,279	-50.9		85	13.4
20-----	25	26,737	-49.4		88	14.2
15-----	21	28,635	-47.1		87	13.4
10-----	9	31,361	-42.4			

SAULT STE. MARIE, MICH.
(992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	221	10.5	92	72	1.9
1,000--	30	150				
950----	30	579	11.4	80	219	2.3
900----	30	1,031	9.6	75	275	7.8
850----	30	1,505	8.1	63	280	12.2
800----	30	2,004	6.2	57	281	14.8
750----	30	2,529	4.0	50	277	18.3
700----	30	3,091	1.2	49	277	22.7
650----	30	3,680	- 1.8	46	277	26.4
600----	30	4,318	- 5.6	46	276	29.1
550----	30	4,989	- 9.8	43	276	32.6
500----	30	5,725	-14.6	40	276	36.1
450----	30	6,512	-19.6		274	37.3
400----	30	7,383	-25.6		276	40.4
350----	30	8,337	-32.8		275	44.3
300----	30	9,404	-40.9		274	51.5
250----	30	10,623	-49.3		274	52.7
200----	30	12,062	-55.5		271	55.8
175----	30	12,911	-56.5		275	56.7
150----	30	13,887	-57.7		276	45.5
125----	30	15,036	-58.5		276	37.1
100----	29	16,440	-59.5		272	27.4
80-----	29	17,843	-57.4		275	20.2
60-----	28	19,666	-55.6		274	10.9
50-----	28	20,830	-54.6		284	7.8
40-----	26	22,267	-53.0		276	5.6
30-----	21	24,132	-51.1		271	5.8
25-----	17	25,353	-49.7		272	4.9
20-----	10	26,820	-47.1			
15-----						
10-----						

SEATTLE, WASH.
(1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	125	11.1	92	60	2.3
1,000--	30	162	11.5	89	63	2.3
950----	30	591	12.2	72	22	1.7
900----	30	1,045	11.4	64	333	1.2
850----	30	1,522	9.6	55	286	3.3
800----	30	2,023	7.5	43	286	4.5
750----	30	2,550	5.4	33	287	6.2
700----	30	3,114	2.3	31	283	9.1
650----	30	3,703	- 1.4		279	12.2
600----	30	4,341	- 5.4		276	14.4
550----	30	5,013	- 9.4		274	16.9
500----	30	5,750	-14.2		273	20.6
450----	30	6,534	-20.0	32	270	23.1
400----	30	7,404	-26.5		270	25.5
350----	30	8,355	-33.7		269	27.8
300----	30	9,418	-41.9		270	29.9
250----	30	10,630	-50.1		271	32.1
200----	30	12,070	-54.5		269	33.6
175----	30	12,924	-55.5		271	34.6
150----	30	13,905	-56.5		271	33.6
125----	29	15,059	-57.8		273	29.5
100----	29	16,465	-57.9		274	21.6
80-----	28	17,873	-57.5		281	15.2
60-----	27	19,698	-55.9		286	9.3
50-----	26	20,862	-55.4		310	7.8
40-----	20	22,290	-54.5		341	6.0
30-----	19	24,135	-53.0		18	4.1
25-----	16	25,311	-52.2		7	4.5
20-----	13	26,754	-50.1		31	6.0
15-----	9	28,674	-46.9			
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SHEMYA, ALASKA
(1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	37	8.5	90	297	2.7
1,000--	28	114	7.9	87	247	8.7
950----	28	539	5.2	85	286	5.8
900----	28	976	2.8	78	291	7.0
850----	28	1,438	.7	72	283	8.2
800----	28	1,923	- 1.2	61	284	10.7
750----	28	2,436	- 3.0	54	284	12.2
700----	28	2,981	- 5.3	49	278	14.8
650----	28	3,555	- 7.9	44	269	17.7
600----	28	4,179	-11.3	42	276	18.1
550----	28	4,834	-15.1	46	272	20.6
500----	28	5,557	-19.6	43	273	23.3
450----	28	6,321	-24.9		274	24.5
400----	28	7,178	-30.8		288	24.3
350----	28	8,112	-37.4		286	28.4
300----	28	9,161	-44.2		279	32.3
250----	28	10,365	-50.5		300	30.7
200----	27	11,819	-52.5		293	39.1
175----	27	12,682	-52.4		292	37.5
150----	27	13,677	-53.1		290	33.6
125----	26	14,850	-53.6		291	27.8
100----	26	16,284	-53.7		291	22.2
80-----	26	17,721	-53.0		288	17.5
60-----	25	19,579	-52.7		289	12.6
50-----	24	20,756	-53.0		286	11.1
40-----	24	22,196	-52.5		282	8.0
30-----	23	24,057	-51.3		270	7.6
25-----	23	25,245	-49.9		257	8.5
20-----	22	26,714	-48.4		261	8.0
15-----	16	28,633	-46.0		265	8.2
10-----						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

SEPTEMBER 1960

Standard pressure surface (mb.)	SHREVEPORT, LA. (1007 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	76	20.0	88	27	2.1
1,000	30	138	21.1	83	37	2.1
950	30	587	21.4	70	99	2.7
900	30	1,053	18.8	69	80	4.3
850	30	1,542	15.9	66	65	5.6
800	30	2,055	12.9	63	49	6.8
750	30	2,589	9.7	60	44	7.4
700	30	3,165	6.1	57	40	7.6
650	30	3,762	2.6	49	41	7.2
600	30	4,413	- .9	44	45	4.9
550	30	5,095	- 4.6	35	32	3.3
500	30	5,847	- 9.1		8	2.5
450	30	6,646	-14.5		349	3.3
400	30	7,537	-20.8		314	3.7
350	30	8,511	-27.5		310	5.8
300	30	9,603	-35.3		283	7.8
250	30	10,851	-43.7		283	11.5
200	30	12,318	-53.3		282	14.8
175	30	13,169	-58.1		280	14.6
150	30	14,128	-63.1		284	11.5
125	30	15,237	-67.5		289	8.2
100	30	16,574	-68.7		294	3.3
80	30	17,918	-65.9		57	2.5
60	29	19,689	-59.9		81	8.0
50	27	20,833	-57.2		85	12.4
40	27	22,253	-54.2		88	14.8
30	25	24,105	-51.4		88	14.4
25	24	25,292	-49.6		87	14.2
20	23	26,766	-47.6		91	14.2
15	18	28,677	-45.2		77	12.6
10						

Standard pressure surface (mb.)	SPOKANE, WASH. (934 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	722	9.9	68	118	2.1
1,000	30	145				
950	30	576				
900	30	1,032	13.9	47	61	1.4
850	30	1,513	12.5	43	266	2.3
800	30	2,019	9.2	42	253	6.6
750	30	2,549	5.7	46	252	9.1
700	30	3,112	2.5	44	257	10.7
650	30	3,703	- 1.0	39	261	13.6
600	30	4,342	- 5.2	37	263	16.5
550	30	5,012	- 9.6	36	263	21.4
500	30	5,750	-14.4	37	264	23.1
450	30	6,533	-19.9		267	24.5
400	30	7,403	-26.2		269	25.3
350	30	8,356	-33.4		265	27.4
300	30	9,420	-41.6		269	27.6
250	30	10,634	-50.1		268	31.9
200	30	12,076	-54.1		268	37.7
175	30	12,931	-55.0		264	39.6
150	30	13,914	-56.1		267	33.4
125	30	15,068	-58.0		270	30.5
100	29	16,469	-58.8		270	24.1
80	29	17,874	-57.6		282	17.3
60	29	19,687	-55.8		295	10.3
50	29	20,860	-54.9		303	6.2
40	28	22,290	-54.3		335	5.2
30	26	24,138	-52.7		342	5.6
25	24	25,308	-51.8		307	6.0
20	22	26,756	-49.9		291	6.6
15	16	28,647	-46.8		270	6.2
10						

Standard pressure surface (mb.)	TAMPA, FLA. (1013 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	[illegible]	23.7	92	50	4.9
1,000	28	120	23.8	88	72	7.8
950	28	571	22.3	83	101	7.2
900	28	1,040	19.8	79	107	6.0
850	28	1,532	17.2	75	115	3.9
800	28	2,048	14.4	73	125	3.5
750	28	2,589	11.6	69	134	3.1
700	28	3,167	8.7	66	125	2.5
650	28	3,777	5.2	63	165	.6
600	28	4,428	1.5	58	208	2.7
550	28	5,117	- 2.4	56	238	1.9
500	28	5,877	- 6.6	53	257	1.7
450	28	6,688	-11.1	42	272	3.3
400	28	7,591	-17.0	38	265	5.2
350	28	8,580	-23.8		246	7.0
300	28	9,689	-32.0		239	11.5
250	28	10,952	-41.9		237	15.5
200	28	12,427	-53.4		238	17.3
175	28	13,276	-59.5		235	13.0
150	27	14,225	-65.7		245	9.7
125	27	15,321	-70.1		247	4.3
100	26	16,638	-71.6		72	5.8
80	26	17,969	-66.5		75	9.9
60	26	19,738	-60.4		82	18.3
50	25	20,881	-57.8		91	22.9
40	23	22,299	-54.6		93	22.9
30	17	24,158	-50.5		90	25.6
25	15	25,356	-48.5		87	28.6
20	10	26,823	-46.5			
15	9	28,750	-44.7			
10						

Standard pressure surface (mb.)	TATOOSH IS., WASH. (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	31	11.1	89	108	5.8
1,000	30	154	12.9	79	115	5.4
950	30	584	12.7	65	200	1.2
900	30	1,039	11.2	57	263	1.7
850	30	1,515	9.7	42	292	5.1
800	30	2,016	7.2	40	287	8.5
750	30	2,540	4.3	39	287	8.5
700	30	3,103	1.3	37	278	10.9
650	30	3,688	- 2.2		278	13.6
600	30	4,327	- 6.2		276	16.3
550	30	4,993	-10.2		282	19.0
500	30	5,732	-15.1		278	21.0
450	30	6,509	-20.6		271	25.5
400	30	7,381	-27.1		269	28.4
350	30	8,330	-34.1		265	31.1
300	30	9,392	-42.3		269	33.0
250	30	10,601	-50.5		272	31.9
200	30	12,038	-55.0		271	35.2
175	30	12,890	-55.9		272	35.8
150	30	13,872	-56.0		270	31.5
125	29	15,029	-57.2		270	26.8
100	29	16,439	-58.0		270	22.2
80	28	17,846	-56.7		273	15.0
60	28	19,672	-55.9		284	8.7
50	28	20,834	-55.5		293	7.2
40	27	22,261	-54.5		347	5.8
30	24	24,100	-53.3		358	5.1
25	20	25,267	-52.4		4	5.1
20	20	26,716	-50.6		350	3.9
15	16	28,601	-47.9		33	6.4
10	5	31,286	-44.1			

Standard pressure surface (mb.)	TOPEKA, KANS. (986 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	269	15.5	91	72	0.6
1,000	30	147				
950	30	587	19.1	65	212	4.1
900	30	1,051	17.3	60	245	6.6
850	30	1,538	14.8	55	248	8.0
800	30	2,049	12.0	53	268	7.4
750	30	2,585	8.9	47	274	7.0
700	30	3,156	5.8	40	269	7.6
650	30	3,757	2.3	38	281	7.8
600	30	4,403	- 1.2		268	8.5
550	30	5,084	- 5.3		271	8.9
500	30	5,835	- 9.9		268	9.7
450	30	6,631	-15.6		272	10.9
400	30	7,519	-22.0		280	12.4
350	30	8,487	-29.2		272	15.5
300	30	9,570	-37.6		273	18.3
250	30	10,803	-46.8		274	23.3
200	30	12,255	-54.5		281	28.4
175	30	13,104	-58.2		283	29.7
150	30	14,068	-61.2		280	26.4
125	29	15,192	-64.7		282	23.1
100	29	16,551	-65.3		278	16.7
80	29	17,917	-63.0		287	10.5
60	29	19,710	-58.0		306	2.9
50	29	20,865	-55.9		326	2.7
40	29	22,293	-53.6		31	1.2
30	25	24,156	-51.4		81	2.9
25	25	25,345	-49.7		76	3.5
20	24	26,807	-47.9		86	4.3
15	22	28,720	-45.1		90	6.2
10	13	31,449	-40.0			

Standard pressure surface (mb.)	TUCSON, ARIZ. (924 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	781	20.9	53	145	6.2
1,000	30	94				
950	30	539				
900	30	1,018	25.7	36	141	6.0
850	30	1,518	23.0	36	110	2.7
800	30	2,043	19.1	40	128	2.9
750	30	2,586	14.8	44	167	3.1
700	30	3,174	10.3	49	181	5.1
650	30	3,777	5.6	53	181	6.4
600	30	4,437	.9	53	184	8.9
550	30	5,123	- 3.1	42	204	6.0
500	30	5,881	- 7.4		269	4.7
450	30	6,685	-12.9	33	276	7.4
400	30	7,583	-19.1		272	11.9
350	30	8,564	-26.0		273	15.0
300	30	9,661	-34.2		275	18.7
250	30	10,913	-43.4		275	24.1
200	30	12,380	-53.9		283	28.4
175	30	13,227	-59.1		284	26.4
150	30	14,181	-64.7		280	23.1
125	30	15,280	-69.6		282	15.0
100	29	16,602	-70.4		291	5.2
80	28	17,935	-66.7		64	4.1
60	27	19,704	-59.6		90	10.3
50	27	20,850	-57.0		97	12.2
40	26	22,269	-55.0		91	16.5
30	23	24,124	-52.4		86	17.3
25	20	25,310	-50.3		89	17.7
20	18	26,768	-48.1		84	16.9
15	15	28,668	-46.0			
10						

Standard pressure surface (mb.)	WASHINGTON, D. C. (1008 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	88	17.1	91	33	1.2
1,000	30	159	17.6	89	42	1.7
950	30	596	16.3	80	341	2.5
900	30	1,057	14.5	74	309	3.3
850	30	1,540	12.8	64	304	4.7
800	30	2,048	10.7	55	299	4.5
750	30	2,578	8.7	46	281	6.4
700	30	3,153	5.9	43	282	7.8
650	30	3,753	2.6	41	273	10.1
600	30	4,400	- .9		274	11.3
550	29	5,089	- 4.8		268	13.0
500	29	5,840	- 9.6		263	15.9
450	29	6,640	-15.1		259	16.9
400	29	7,529	-21.3		267	17.7
350	29	8,498	-28.5		270	20.2
300	29	9,586	-36.5		268	21.2
250	29	10,825	-45.6		268	24.5
200	29	12,280	-55.1		271	30.7
175	29	13,125	-59.1		276	31.5
150	29	14,084	-62.4		274	29.0
125	29	15,203	-64.7		271	22.9
100	29	16,564	-64.3		278	15.9
80	29	17,936	-62.2		283	8.7
60	28	19,734	-57.6		309	3.1
50	27	20,888	-55.5		31	.8
40	27	22,319	-53.1		83	3.5
30	25	24,183	-50.4		71	5.8
25	25	25,378	-48.8		79	6.0
20	24	26,852	-46.4		78	6.4
15	18	28,765	-43.7		85	5.2
10	5	31,555	-39.8			

Standard pressure surface (mb.)	WINNEMUCCA, NEV. (871 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,310	8.6	47	141	0.6
1,000	30	144				
950	30	578				
900	30	1,036				
850	30	1,518	17.3	31	65	3.5
800	30	2,034	15.9	26		.0
750	30	2,572	12.1	27	273	2.9
700	30	3,152	7.9	31	247	6.8
650	30	3,753	3.3	37	239	11.5
600	30	4,402	- 1.6	38	236	15.2
550	30	5,081	- 6.2		248	15.2
500	30	5,828	-11.4		252	17.7
450	30	6,622	-17.0		255	19.0
400	30	7,502	-23.4		247	19.8
350	30	8,465	-30.6		251	22.3
300	30	9,543	-38.7		257	28.2
250	30	10,773	-47.5		251	35.4
200	30	12,224	-54.4		262	37.3
175	30	13,074	-57.3		260	37.9
150	30	14,043	-59.7		262	33.0
125	30	15,175	-62.4		269	26.8
100	30	16,549	-63.8		276	18.7
80	30	17,921	-62.3		279	7.8
60	29	19,709	-58.9		334	2.5
50	29	20,858	-57.0		9	1.9
40	27	22,279	-55.2		351	2.1
30	24	24,111	-52.9		311	2.1
25	23	25,289	-51.3		293	2.3
20	23	26,744	-49.6		298	1.7
15	17	28,632	-47.9		302	1.0
10	8	31,298	-45.7			

Standard pressure surface (mb.)	YAKUTAT, ALASKA (1013 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	12	7.8	94	93	3.9
1,000	30	119			110	6.4
950	30	540	6.8	85	151	9.9
900	30	985	3.9	84	168	8.9
850	30	1,448	1.0	83	182	9.5
800	30	1,934	- 1.8	81	196	10.9
750	30	2,443	- 4.5	75	202	11.7
700	30	2,987	- 7.3	63	216	13.8
650	30	3,557	-10.5	55	227	16.5
600	30	4,175	-13.8	53	232	20.4
550	30	4,830	-17.5	53	237	23.3
500	30	5,542	-21.9	51	241	26.8
450	30	6,307	-26.9	49	243	29.7
400	30	7,151	-32.9	43	243	31.5
350	30	8,079	-39.4		252	36.5
300	30	9,119	-46.2		255	40.2
250	30	10,314	-52.3		255	42.0
200	30	11,753	-52.6		258	37.9
175	30	12,618	-51.7		260	33.4
150	29	13,621	-52.1		258	29.3
125	29	14,804	-51.0		255	26.2
100	29	16,258	-50.8		254	22.7
80	28	17,706	-50.7		253	18.7
60	27	19,587	-50.9		261	13.8
50	27	20,772	-51.0		260	12.2
40	27	22,224	-50.9		267	11.3
30	26	24,097	-50.4		269	10.7
25	25	25,291	-50.1		273	10.1
20	23	26,764	-49.1		277	10.9
15	13	28,647	-48.3			
10						

Note: All observations scheduled at 1200, G. C. T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant wind speed is biased toward a lower value as the number of observations on which the resultant is based lessens. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun

BLUE HILL OBS., MASS.

Date	Sun's zenith distance								
	A M					P M			
	78.7°	75.7°	70.7°	60.0°	*	60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Sept.									
3-----	0.91	1.01	1.11	1.24	1.36	1.22	1.05	----	0.87
5-----	----	----	----	----	----	----	1.00	0.82	.71
7-----	.61	74	.86	1.03	1.20	----	----	----	----
8-----	H .47	H .56	H .71	H .95	H 1.11	----	----	----	----
14----	.93	1.03	1.13	1.27	----	1.22	1.07	.96	.89
15----	.92	1.00	1.12	1.26	1.37	----	----	----	----
16----	----	----	----	----	----	1.25	1.17	1.07	.99
17----	.92	1.02	1.11	1.28	----	----	----	----	----
21----	----	----	----	----	---	1.15	.98	.85	.72
22----	.82	.97	1.05	1.17	--	----	----	----	----
Averages	0.80	0.90	1.01	1.17	1.26	1.21	1.05	0.93	0.84

TUCSON, ARIZ.

Date	Air mass								
	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Sept.									
3-----	0.85	0.95	1.05	1.18	----	----	----	----	----
7-----	.74	.84	.94	----	----	----	----	----	----
10----	.69	.79	.92	1.09	1.28	----	----	----	----
11----	.76	.86	.98	1.14	----	----	----	----	----
12----	.70	.81	.93	1.12	1.36	1.11	0.93	0.80	0.70
13----	.71	.81	.94	----	----	----	----	.78	.67
15----	.76	.87	----	----	1.30	----	----	----	----
16----	----	----	----	----	----	----	.92	.81	.71
18----	.78	.89	1.01	1.18	1.34	1.16	.96	.87	.75
21----	.82	----	1.02	----	----	----	1.11	.99	.91
22----	.96	1.03	----	1.29	----	----	----	----	----
23----	.93	----	----	1.27	1.42	1.28	1.10	.98	.88
24----	.88	.98	1.11	1.26	1.37	----	----	.87	.77
25----	.85	.95	1.08	1.21	1.39	1.21	1.05	.92	.82
26----	.86	.93	1.05	1.22	1.35	1.15	.97	.83	.74
27----	.76	.85	.97	1.14	1.28	1.10	.93	.81	.68
28----	.76	.84	.96	----	1.31	1.15	.95	.87	.75
29----	.80	.88	----	1.19	1.35	----	1.00	.88	.78
30----	.82	.92	.99	1.15	----	----	----	----	----
Averages	0.80	0.89	1.00	1.18	1.34	1.17	0.99	0.87	0.76

ALBUQUERQUE, N. MEX.

Date	Air mass								
	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Sept.									
1-----	0.79	0.89	1.03	1.19	1.35	1.19	1.06	0.94	0.83
2-----	----	.85	1.01	1.18	1.34	1.17	----	----	.79
3-----	.88	.97	1.07	1.21	1.40	1.21	1.11	.98	.87
4-----	.77	.89	.99	1.20	1.35	1.14	.99	.87	.77
5-----	.77	.88	1.01	1.17	1.36	1.17	1.01	.91	.79
6-----	.81	.87	1.03	1.16	1.32	1.09	.86	----	----
7-----	.47	.59	.72	1.01	1.24	1.14	----	----	.83
8-----	.77	.88	.99	1.15	1.36	1.16	1.04	.91	.81
10----	----	----	----	----	1.34	1.17	1.07	1.00	.88
11----	.88	.98	1.10	1.25	1.41	1.21	1.02	.89	.76
12----	.81	.93	1.03	1.14	----	1.15	1.01	.87	.79
13----	.76	.82	1.05	1.15	1.39	1.13	----	----	----
14----	.99	1.02	1.06	1.13	----	----	----	----	----
15----	.79	.92	1.04	1.20	1.36	----	.91	.77	.70
16----	----	----	1.14	----	1.33	1.00	.58	----	----
17----	.92	.97	----	----	----	----	----	----	----
19----	.75	----	.98	1.03	1.27	----	----	----	----
20----	.73	.83	.87	----	----	----	----	----	----
21----	.61	.84	.97	1.16	1.33	1.13	.95	.78	.64
23----	.89	.98	1.09	----	----	----	1.09	.97	.86
24----	.99	1.07	1.17	1.29	1.42	1.28	1.13	1.01	.91
25----	.93	1.02	1.13	1.25	1.39	1.22	1.07	.95	.85
26----	.92	.99	1.09	1.22	1.35	1.22	1.05	.94	.82
27----	.87	.98	1.09	1.13	1.35	----	----	----	----
28----	----	----	----	----	1.29	----	----	----	----
29----	.83	.94	1.05	----	1.37	1.19	1.02	.87	.73
30----	.61	.72	.90	1.06	1.16	----	----	----	----
Averages	0.82	0.74	1.05	1.19	1.37	1.16	1.03	0.93	0.71

* Values corresponding to true solar noon.
H Haze.
I Intense haze - indeterminable.
M Moderate haze - indeterminable.
S Slight haze - indeterminable.
IH Intense haze.
MH Moderate haze.

MADISON, WIS.

Date	Sun's zenith distance								
	A M					P. M.			
	78.7°	75.7°	70.7°	60.0°	*	60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Sept.									
3-----	----	----	IH0.63	MH0.87	S 1.07	MH0.83	MH0.70	MH0.52	----
5-----	----	----	IH .59	MH .86	M 1.06	----	M .62	M .47	M 0.40
7-----	MH0.47	MH0.56	MH .66	MH .80	----	MH .61	M .42	M .31	M .23
10----	S .95	S 1.04	S 1.18	S 1.30	S 1.41	1.23	1.12	1.01	.91
11----	S .90	S .98	S 1.11	S 1.25	----	----	----	----	----
12----	S .96	S 1.07	S 1.18	S 1.32	----	----	----	----	----
13----	----	----	S 1.10	S 1.28	----	----	----	----	----
26----	S .64	S .72	S .84	S 1.04	S 1.28	S 1.15	S .99	S .86	S .76
28----	S .87	S .95	M 1.04	----	----	----	----	----	----
Averages	0.80	0.89	0.97	1.09	1.21	0.96	0.77	0.63	0.58

OMAHA, NEBR.

Date	Air mass								
	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Sept.									
1-----	----	----	----	----	S 1.08	0.69	----	----	----
2-----	S 0.31	S 0.43	S 0.59	S 0.78	S 1.04	----	M 0.58	M 0.39	M 0.27
3-----	----	----	----	S .71	M .85	M .62	M .42	M .26	M .18
4-----	I .16	M .34	M .47	S .70	M .89	S .69	S .48	M .37	M .27
5-----	.30	.43	.57	.80	S .90	S .69	S .50	M .36	M .26
6-----	----	----	.50	.76	S .95	H .67	----	----	----
7-----	----	----	I .38	I .56	I .69	----	----	----	----
10----	S .62	S .76	S .91	S 1.08	S 1.20	S .96	S .79	S .72	S .51
11----	----	----	----	----	S 1.10	----	----	----	----
13----	----	----	M .77	M .99	S 1.22	1.00	.81	.65	.53
19----	----	----	----	----	S 1.12	M .76	M .65	M .43	M .32
20----	----	----	H .69	H .93	S 1.06	----	----	----	----
25----	.65	.79	.91	1.06	1.09	S .92	S .72	S .54	----
26----	M .53	M .65	S .82	1.00	1.07	S .87	S .71	S .57	S .47
27----	----	----	.79	.97	1.06	S .95	S .77	----	----
30----	.56	.69	.99	1.11	----	----	----	----	----
Averages	0.45	0.58	0.70	0.88	1.02	0.80	0.64	0.48	0.35

MAUNA LOA OBS., HAWAII

Date	Air mass								
	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Sept.									
1-----	1.35	1.40	1.46	1.56	1.68	1.48	1.33	----	----
2-----	----	----	----	----	1.65	----	----	----	----
3-----	1.26	1.34	1.43	1.53	----	----	----	----	----
4-----	1.26	1.33	1.43	1.53	1.62	1.54	1.44	1.35	1.28
5-----	1.27	1.34	1.44	1.55	1.65	1.49	1.38	----	1.23
6-----	1.29	1.36	1.45	1.55	1.65	1.49	1.42	1.33	1.24
7-----	1.29	1.37	1.46	1.56	----	1.51	1.41	1.33	1.25
8-----	1.29	1.36	1.43	1.54	1.66	1.47	1.37	1.28	1.20
9-----	1.25	1.32	1.41	1.52	1.65	----	1.35	1.27	1.18
10----	1.24	1.32	1.42	1.52	1.61	----	----	----	----
11----	1.27	1.34	1.43	1.52	----	----	----	----	----
12----	1.20	1.29	1.38	1.49	----	1.46	1.34	1.26	1.18
13----	1.24	1.32	1.41	1.52	1.65	1.53	1.41	1.31	1.24
14----	1.29	1.36	1.45	1.55	1.64	----	1.41	1.33	1.27
15----	1.31	1.38	1.46	1.58	1.68	----	----	----	----
18----	1.19	----	1.34	1.47	----	1.49	----	1.26	1.18
19----	----	1.28	1.37	1.49	----	----	----	----	----
20----	1.18	1.28	1.36	1.48	----	----	----	----	----
21----	----	----	----	----	----	1.52	1.40	1.31	1.24
22----	----	----	----	----	1.63	1.51	1.43	1.34	1.31
23----	1.28	1.36	1.45	1.55	1.67	----	----	----	----
26----	1.28	1.36	1.44	1.54	----	----	----	----	----
27----	----	----	----	1.54	----	----	----	----	----
Averages	1.26	1.34	1.42	1.53	1.65	1.50	1.39	1.31	1.23

GUAM, M. I.

Date	Air mass								
	4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
Sept.									
4-----	----	5.64	5.78	----	----	----	----	----	----

Recorder inoperative September 22-30

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2. page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Albuquerque, N.Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill Obs., Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.
Sept. 3----	661	481	30	551	461	481	144	323	541	582	---	572	285
Sept. 4----	657	463	58	621	273	387	141	340	479	111	551	115	247
Sept. 5----	649	464	317	613	520	465	107	415	542	466	610	498	540
Sept. 6----	637	459	405	625	519	446	88	407	486	506	595	497	312
Sept. 7----	(609)	442	360	---	546	365	153	352	419	512	---	517	381
Sept. 8----	635	179	78	15	548	379	70	282	439	499	---	496	214
Sept. 9----	441	538	206	586	499	468	145	181	553	401	---	432	168
Average------	(613)	432	208	502	481	427	121	329	494	440	---	447	307
Sept. 10----	514	567	367	---	253	441	107	180	548	486	---	509	267
Sept. 11----	636	---	425	---	355	394	219	200	516	74	---	90	560
Sept. 12----	527	---	446	461	251	533	98	156	531	30	---	19	588
Sept. 13----	609	560	102	524	336	534	96	166	522	---	---	528	559
Sept. 14----	499	151	461	333	320	368	102	293	502	536	---	530	563
Sept. 15----	---	488	441	---	391	118	119	103	501	486	---	486	577
Sept. 16----	602	139	76	536	181	136	82	223	353	465	505	474	587
Average------	565	381	331	463	298	360	117	189	496	346	---	377	529
Sept. 17----	514	238	44	566	358	268	132	332	471	479	492	487	558
Sept. 18----	479	221	274	577	295	348	170	285	479	364	505	372	482
Sept. 19----	(513)	283	423	581	160	482	140	106	481	123	499	111	504
Sept. 20----	405	476	70	584	482	483	93	114	485	66	450	52	451
Sept. 21----	588	226	21	441	478	444	88	259	348	386	503	387	402
Sept. 22----	237	120	346	543	184	242	104	166	233	462	488	476	534
Sept. 23----	575	80	22	490	267	486	71	90	153	474	471	424	470
Average------	(473)	235	171	540	318	393	114	193	379	336	487	330	486
Sept. 24----	599	137	159	351	84	495	145	135	477	328	464	340	515
Sept. 25----	585	519	285	323	293	297	171	206	449	349	453	389	482
Sept. 26----	575	468	290	511	440	---	64	25	472	340	458	334	537
Sept. 27----	561	475	290	509	435	81	82	30	435	163	396	125	492
Sept. 28----	543	441	229	364	413	77	76	126	357	164	420	158	545
Sept. 29----	542	327	181	318	400	126	63	8	358	77	442	83	526
Sept. 30----	429	424	141	392	413	386	126	78	429	85	450	105	537
Average------	548	399	225	395	354	244	104	87	425	215	440	219	519

1960	Canton Island Pacific Area	Cape Hatteras, N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.	Davis, Calif.	Dodge City, Kans.	East Lansing, Mich.	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska
Sept. 3----	---	666	584	514	533	560	408	584	618	407	584	268	149
Sept. 4----	---	681	146	560	338	572	286	597	610	336	594	602	123
Sept. 5----	---	629	548	600	359	549	399	580	603	539	532	627	170
Sept. 6----	---	614	454	521	465	536	581	575	602	511	591	608	224
Sept. 7----	---	241	357	523	466	513	569	555	584	486	471	618	328
Sept. 8----	---	625	484	234	428	536	565	547	376	462	585	618	147
Sept. 9----	---	644	377	363	219	165	426	318	250	322	553	577	154
Average------	---	586	422	474	401	490	462	537	521	438	558	560	185
Sept. 10----	---	---	408	---	232	588	467	519	607	398	498	377	174
Sept. 11----	---	205	303	15	217	602	455	511	555	533	633	512	111
Sept. 12----	---	570	65	508	379	600	366	533	595	234	632	509	83
Sept. 13----	---	625	507	578	246	595	448	538	594	300	618	440	173
Sept. 14----	---	628	416	519	(448)	509	406	543	556	---	581	583	262
Sept. 15----	---	387	197	355	182	386	406	538	441	(306)	516	576	269
Sept. 16----	546	491	491	168	330	245	364	472	572	452	460	469	94
Average------	---	484	341	357	(290)	504	416	522	560	(370)	563	495	167
Sept. 17----	608	582	440	470	93	478	263	504	---	329	563	436	271
Sept. 18----	636	590	119	313	109	472	445	505	533	298	535	572	272
Sept. 19----	599	601	385	523	196	566	229	510	458	134	573	562	262
Sept. 20----	---	592	185	508	77	518	490	497	415	181	587	537	190
Sept. 21----	---	286	412	478	196	261	506	494	555	229	572	379	170
Sept. 22----	643	607	419	480	356	483	384	508	230	314	553	515	57
Sept. 23----	640	611	313	494	310	384	204	483	59	106	605	555	226
Average------	623	553	325	467	191	452	360	500	375	227	570	508	207
Sept. 24----	642	609	452	425	361	187	308	471	456	353	596	534	62
Sept. 25----	613	590	449	501	366	317	376	479	552	175	586	536	109
Sept. 26----	678	452	330	463	288	333	356	384	538	251	580	519	155
Sept. 27----	694	187	167	518	210	419	370	477	525	350	567	469	19
Sept. 28----	680	305	217	215	238	520	418	459	510	440	562	464	32
Sept. 29----	689	280	163	130	362	397	448	446	513	326	557	290	103
Sept. 30----	---	136	80	339	40	529	422	436	496	415	337	452	105
Average------	666	366	265	370	267	386	386	450	513	330	540	466	83

1960	Flaming Gorge, Utah	Ft. Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N.C.	Griffin, Ga.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Lander, Wyo.
Sept. 3----	531	557	493	539	508	628	385	430	636	387	493	574	559	531
Sept. 4----	537	538	503	663	477	602	---	493	600	515	699	95	557	486
Sept. 5----	411	566	515	583	555	590	519	547	529	502	710	499	355	417
Sept. 6----	247	476	499	448	556	434	531	308	606	426	719	560	538	306
Sept. 7----	338	564	495	428	305	610	172	489	566	411	746	507	584	444
Sept. 8----	511	604	429	413	524	611	514	425	378	415	546	516	408	572
Sept. 9----	601	504	346	640	537	609	518	465	608	283	668	376	468	582
Average------	454	544	469	531	495	583	440	451	561	420	654	447	496	477
Sept. 10----	581	418	395	300	529	623	479	287	552	213	642	482	249	451
Sept. 11----	546	647	443	475	509	512	492	114	413	565	652	64	337	567
Sept. 12----	579	619	450	208	497	599	483	564	658	388	672	22	590	564
Sept. 13----	327	617	461	595	495	151	466	523	648	492	690	78	584	281
Sept. 14----	500	605	458	525	472	548	460	544	457	490	706	532	555	453
Sept. 15----	545	461	456	578	430	536	436	377	165	348	687	411	561	500
Sept. 16----	342	528	443	640	425	173	235	341	194	474	684	479	536	522
Average------	489	557	444	474	479	449	436	393	441	424	676	295	487	477
Sept. 17----	246	462	446	465	491	399	451	219	398	256	671	140	484	197
Sept. 18----	561	550	427	480	336	574	336	277	452	273	671	88	480	547
Sept. 19----	559	521	411	620	423	560	410	364	594	314	557	140	523	546
Sept. 20----	472	542	(437)	634	449	563	---	486	575	147	633	274	514	532
Sept. 21----	411	561	473	517	(485)	475	389	477	598	317	679	353	457	194
Sept. 22----	173	564	454	468	478	253	442	243	381	443	654	322	513	171
Sept. 23----	425	529	440	445	169	513	271	487	582	415	659	244	523	469
Average------	407	533	(441)	518	(404)	477	383	365	511	309	646	223	499	380
Sept. 24----	538	188	425	267	440	558	350	487	573	390	662	347	429	521
Sept. 25----	495	200	420	294	341	550	354	462	255	365	647	370	211	482
Sept. 26----	516	190	253	350	(462)	546	414	445	85	352	621	407	263	496
Sept. 27----	523	188	412	511	402	533	419	377	108	134	---	247	352	494
Sept. 28----	198	562	446	134	367	499	371	142	145	401	---	265	259	439
Sept. 29----	469	550	413	216	404	513	377	96	180	422	---	99	523	498
Sept. 30----	258	541	402	412	364	506	345	376	445	240	---	210	506	486
Average------	428	346	396	312	(397)	529	376	341	256	329	---	278	363	488

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

SEPTEMBER 1960

1960	Laramie, Wyo.	Las Vegas, Nev.	Lemont, Ill.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.	Matanuska, Alaska	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Page, Ariz.	Phoenix, Ariz.	Portland, Me.	Pullman, Wash.	Rapid City, S.Dak.	Riverside, Calif.	St. Cloud, Minn.	Salt Lake City, Utah	San Antonio, Tex.	Santa Maria, Calif.	S.Ste.Marie, Mich.	Sayville, N. Y.	Seattle-Tacome, Wash.	Shreveport, La.	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Tucson, Ariz.	Washington, D.C. (Obs & Test Dev Ctr)
Sept. 3----	431	456	518	601	590	590	614	539	541	225	589	---	225	498	525	598	628	553	520	603	617	601	625	515	514	558	541	305	367	500	115	587	449	535	390	631	515	185	647	596
Sept. 4----	563	421	520	615	598	613	642	310	518	115	738	---	308	530	528	138	283	551	465	---	508	546	134	225	534	632	531	530	377	649	486	235	138	549	178	291	578	527	567	539
Sept. 5----	514	440	273	537	579	618	645	265	491	235	730	586	163	511	490	471	496	555	507	---	462	508	599	477	552	641	524	571	509	658	546	298	419	490	471	300	566	529	474	267
Sept. 6----	508	591	488	589	539	580	578	527	518	372	721	583	333	528	478	528	554	542	477	184	(370)	495	581	580	382	630	527	432	550	637	474	563	---	472	567	471	550	390	539	462
Sept. 7----	429	595	449	608	535	576	595	507	494	75	728	559	559	576	418	537	500	522	437	528	593	560	559	---	481	620	349	569	---	572	472	518	518	526	558	461	545	258	575	548
Sept. 8----	434	530	461	427	435	509	518	465	393	207	715	563	510	464	393	521	530	167	394	550	611	553	534	590	330	530	307	603	---	375	168	511	528	500	542	552	513	364	576	480
Sept. 9----	579	597	367	218	467	448	535	624	348	123	694	249	104	---	219	501	438	555	431	331	516	559	533	574	590	581	574	610	---	474	369	487	506	475	537	379	154	466	(581)	409
Average------	494	518	440	514	535	562	590	463	472	193	702	508	314	518	436	469	490	492	462	439	(525)	546	509	493	488	599	479	517	451	552	376	457	426	507	463	441	489	389	(566)	471
Sept. 10----	563	471	438	---	134	499	544	573	557	---	492	527	101	496	78	499	537	573	309	500	608	566	529	491	580	496	569	562	---	450	541	486	251	192	391	480	519	104	611	344
Sept. 11----	492	530	542	---	601	550	555	492	509	---	705	521	457	503	80	148	71	544	326	610	557	561	124	534	565	530	403	531	---	(470)	189	44	443	575	504	40	586	498	578	332
Sept. 12----	561	580	476	---	658	544	539	503	548	227	473	524	570	574	575	---	46	559	532	594	540	561	32	401	553	568	290	569	---	526	212	---	178	587	385	76	594	309	615	170
Sept. 13----	320	580	469	653	579	525	550	587	527	170	712	535	510	589	585	---	465	569	548	579	509	546	565	362	465	574	569	441	---	598	425	483	238	603	458	266	548	566	599	321
Sept. 14----	492	586	448	642	573	507	566	408	411	288	700	515	527	564	568	546	583	260	464	550	452	554	561	507	268	579	504	555	---	465	263	505	205	581	487	562	526	523	567	539
Sept. 15----	423	585	317	587	567	534	553	509	247	235	712	378	584	493	482	467	502	449	424	542	445	564	423	394	428	570	366	546	---	336	546	103	196	564	354	458	482	571	595	509
Sept. 16----	439	554	103	516	517	472	449	67	464	185	323	520	533	512	160	434	428	333	126	502	531	568	553	493	468	527	80	343	---	456	473	385	127	532	474	305	520	576	(600)	448
Average------	470	555	399	599	518	519	537	448	466	221	588	503	469	533	361	419	376	469	390	554	520	560	398	455	475	549	397	507	---	(472)	378	384	234	519	436	312	539	450	(595)	380
Sept. 17----	348	580	355	60	474	374	497	275	462	334	433	485	314	320	118	517	417	191	76	507	424	561	529	515	120	446	515	391	---	---	81	439	105	500	461	122	533	562	549	249
Sept. 18----	518	577	275	396	506	510	523	38	347	304	660	502	292	510	484	249	57	374	239	513	534	369	368	482	519	575	97	550	---	504	353	77	326	502	459	188	452	420	(606)	212
Sept. 19----	527	550	140	392	341	450	453	122	480	240	522	488	583	527	483	70	52	516	412	506	563	549	203	498	498	498	396	562	---	517	---	55	109	438	339	85	515	380	539	222
Sept. 20----	474	568	134	314	469	527	531	348	415	115	667	457	573	548	549	131	189	454	480	---	545	539	51	512	489	559	572	510	521	517	185	196	331	378	---	262	259	534	571	257
Sept. 21----	438	566	259	586	475	352	408	263	460	80	589	509	151	549	538	287	269	314	489	320	560	564	386	503	481	466	324	542	492	563	123	220	409	390	475	283	450	507	(602)	193
Sept. 22----	327	564	377	557	455	520	510	127	135	187	675	495	117	523	490	508	395	202	450	517	381	557	416	431	44	560	439	373	453	569	116	469	123	349	378	262	494	346	(616)	355
Sept. 23----	457	567	225	499	484	528	544	94	178	70	689	455	162	260	396	498	438	122	324	387	560	559	469	386	470	567	47	534	416	556	253	455	260	142	376	363	275	365	(620)	402
Average------	441	568	252	401	458	466	495	181	354	190	605	484	313	462	437	323	260	310	353	458	509	528	346	474	375	524	341	495	470	538	185	273	238	429	415	224	426	445	(585)	270
Sept. 24----	487	564	340	400	392	518	578	229	177	147	687	463	222	527	493	463	457	167	399	312	563	553	220	116	199	571	133	520	324	569	71	410	171	354	201	360	327	215	--	327
Sept. 25----	486	541	278	482	409	512	(547)	499	494	124	454	465	566	551	492	214	320	501	405	295	557	552	512	384	133	560	497	513	524	562	386	243	172	191	390	172	254	467	589	384
Sept. 26----	487	515	408	441	212	485	542	479	472	239	444	448	404	462	283	426	384	485	368	172	547	534	488	465	298	556	582	503	417	496	408	141	322	102	444	371	---	500	574	- -
Sept. 27----	486	545	446	287	166	495	545	498	447	27	455	233	376	467	138	(238)	423	491	128	521	511	524	299	440	168	547	580	424	254	512	452	286	398	83	437	272	518	488	(560)	429
Sept. 28----	365	484	464	355	474	477	519	462	458	17	---	442	450	531	259	(177)	178	403	136	532	530	524	129	467	463	548	308	476	532	395	334	132	381	524	---	166	526	369	---	198
Sept. 29----	472	546	183	463	515	480	446	172	363	117	305	438	528	518	371	105	25	---	83	508	532	520	121	453	475	495	320	493	528	353	186	62	373	526	384	45	499	442	---	74
Sept. 30----	454	521	348	344	495	289	347	455	434	51	461	424	274	484	452	197	295	474	326	467	497	520	112	417	466	484	414	435	504	271	373	242	344	511	375	289	---	535	(506)	407
Average------	462	531	353	396	381	465	(504)	399	407	103	468	416	403	506	356	(260)	298	420	264	401	534	532	269	392	443	537	405	481	440	451	316	260	309	327	372	282	425	431	(557)	303

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

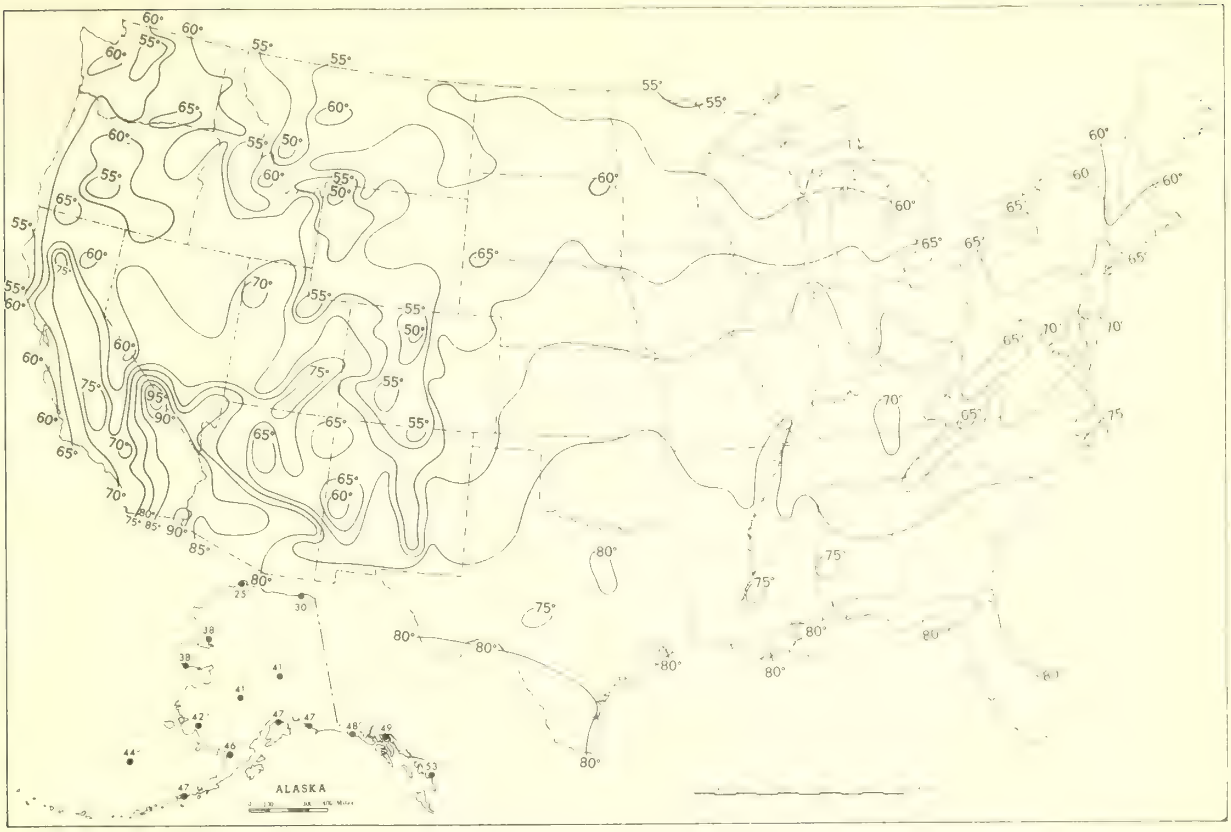
SEPTEMBER 1960

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bismarck, N. Dak.	282	290	265	263	262	278	289	---	289	283	307	288	285	291	270	298	298	288	286	277	---	292	---	301	275	309	304	310	306	299	
Caribou, Me.	296	385	357	---	301	298	278	281	283	295	---	---	277	314	333	344	---	---	316	---	289	275	---	---	320	350	---	---	---	---	
Green Bay, Wis.	265	---	259	260	244	254	266	257	273	276	296	302	292	307	---	---	---	---	---	279	---	---	---	---	266	257	284	286	---	303	
Fort Worth, Tex.	272	287	292	296	282	298	299	289	281	279	281	288	286	291	288	285	276	280	283	279	272	280	272	---	---	---	291	288	285	281	
Mauna Loa, Hawaii	277	275	275	276	276	272	273	278	284	282	280	280	283	283	282	---	273	279	274	277	276	273	273	269	267	269	269	---	269	270	

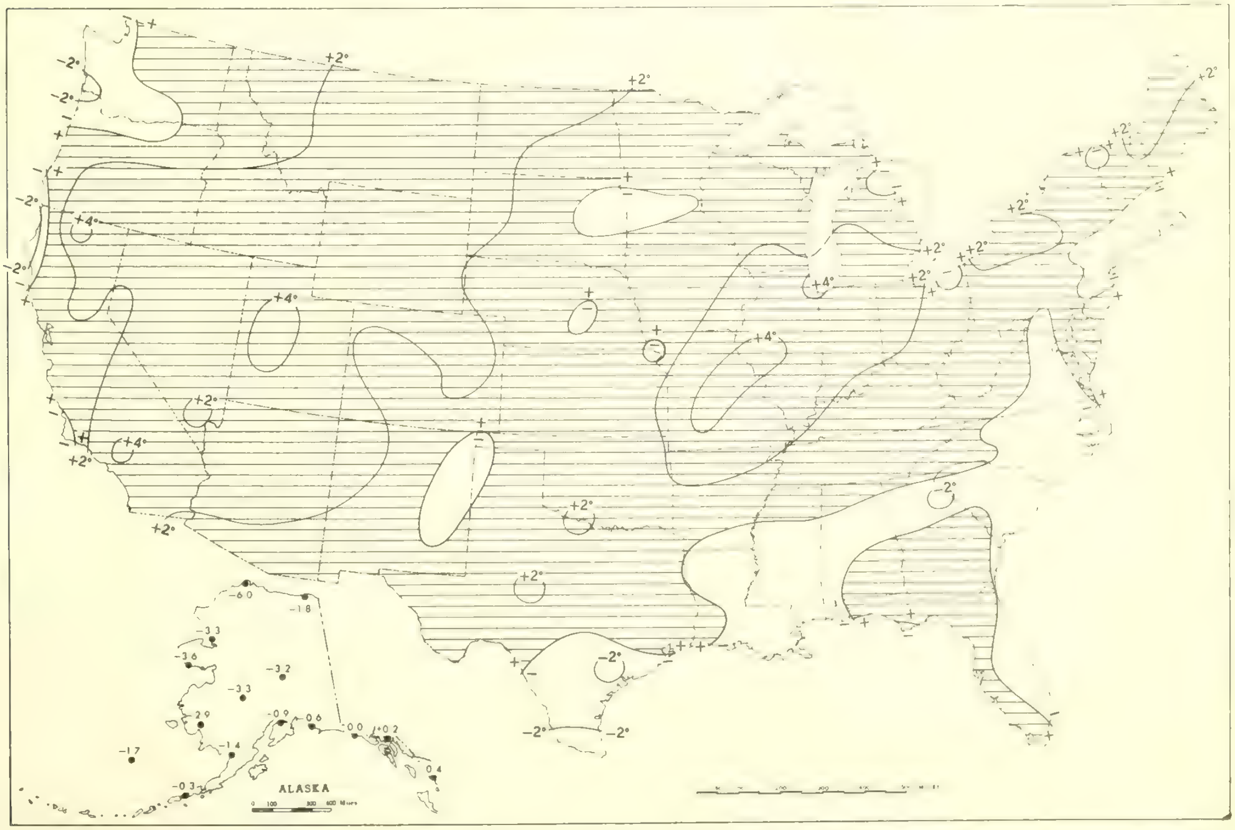
The spectrophotometer measures the total amount of ozone in the atmosphere, i. e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observations can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations, therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational procedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer," Annals of the International Geophysical Year, Volume V, Pergamon Press 1957

Chart I. A. Average Temperature (°F.) at Surface, September 1960.

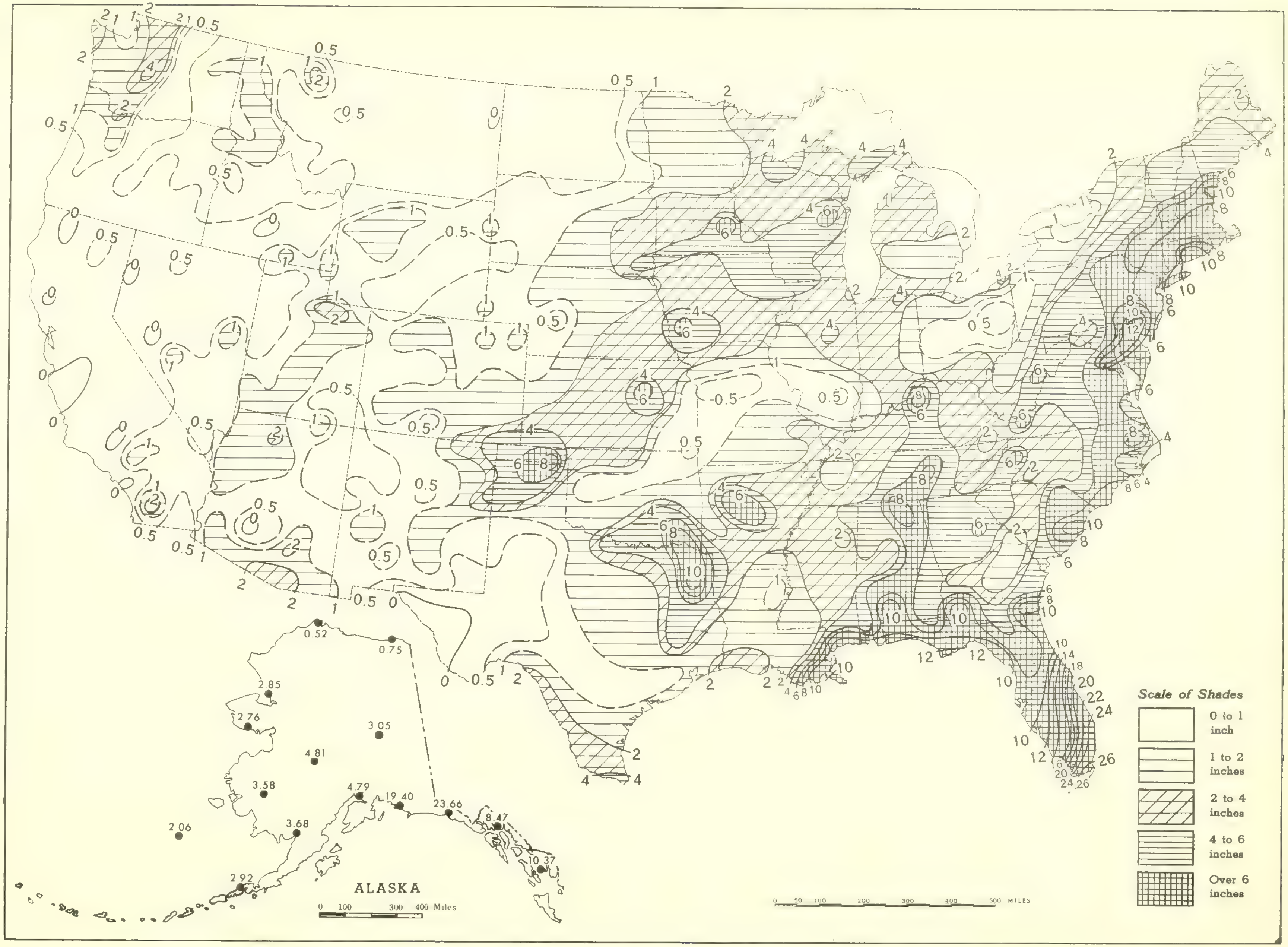


B. Departure of Average Temperature from Normal (°F.), September 1960.



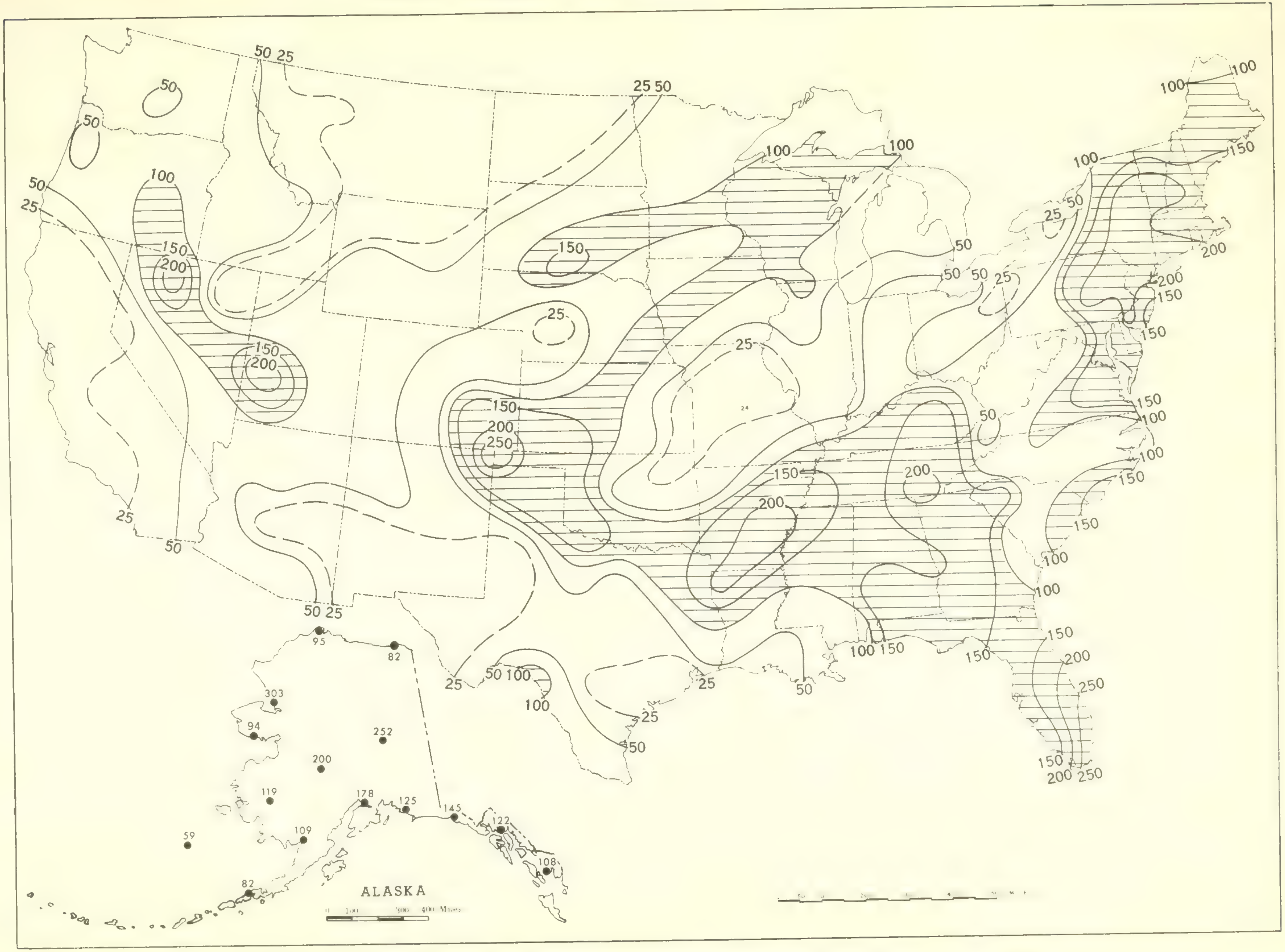
A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), September 1960.



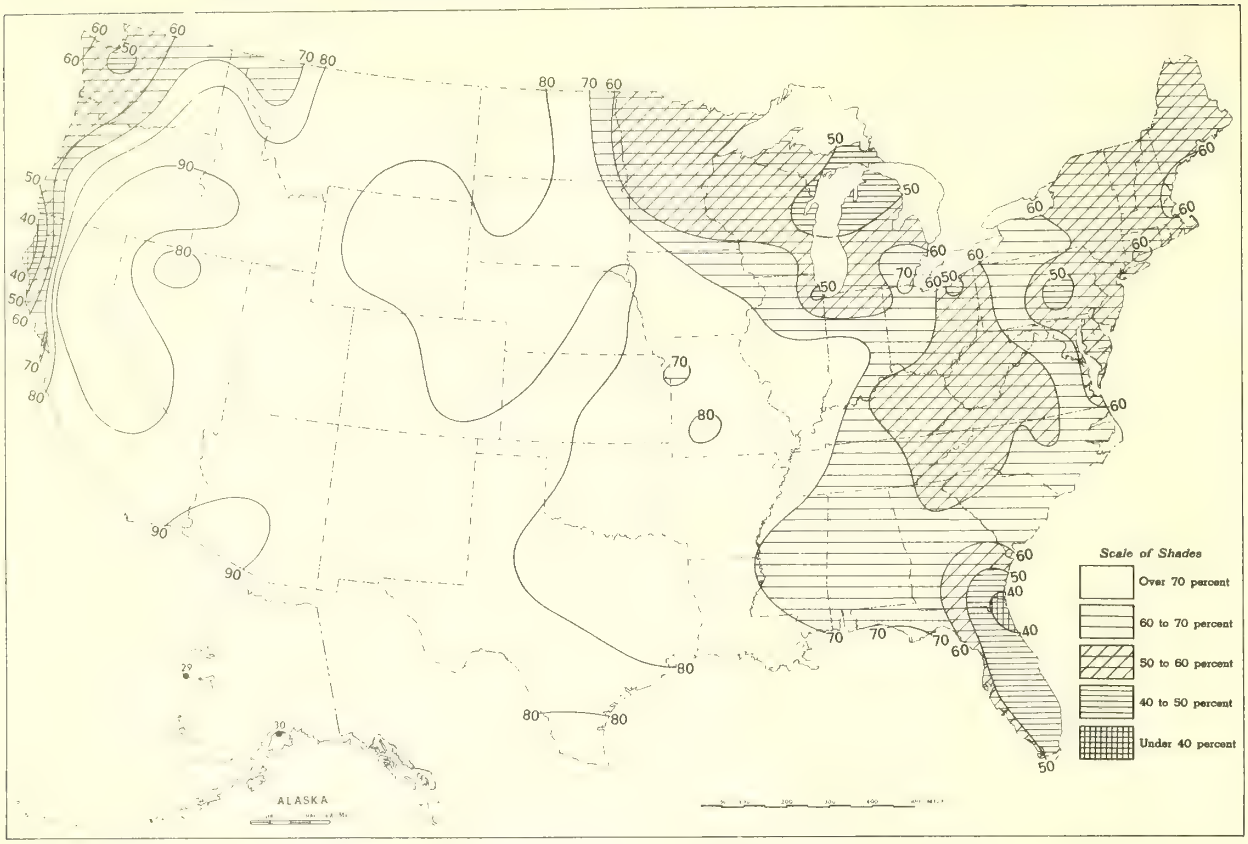
Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, September 1960.

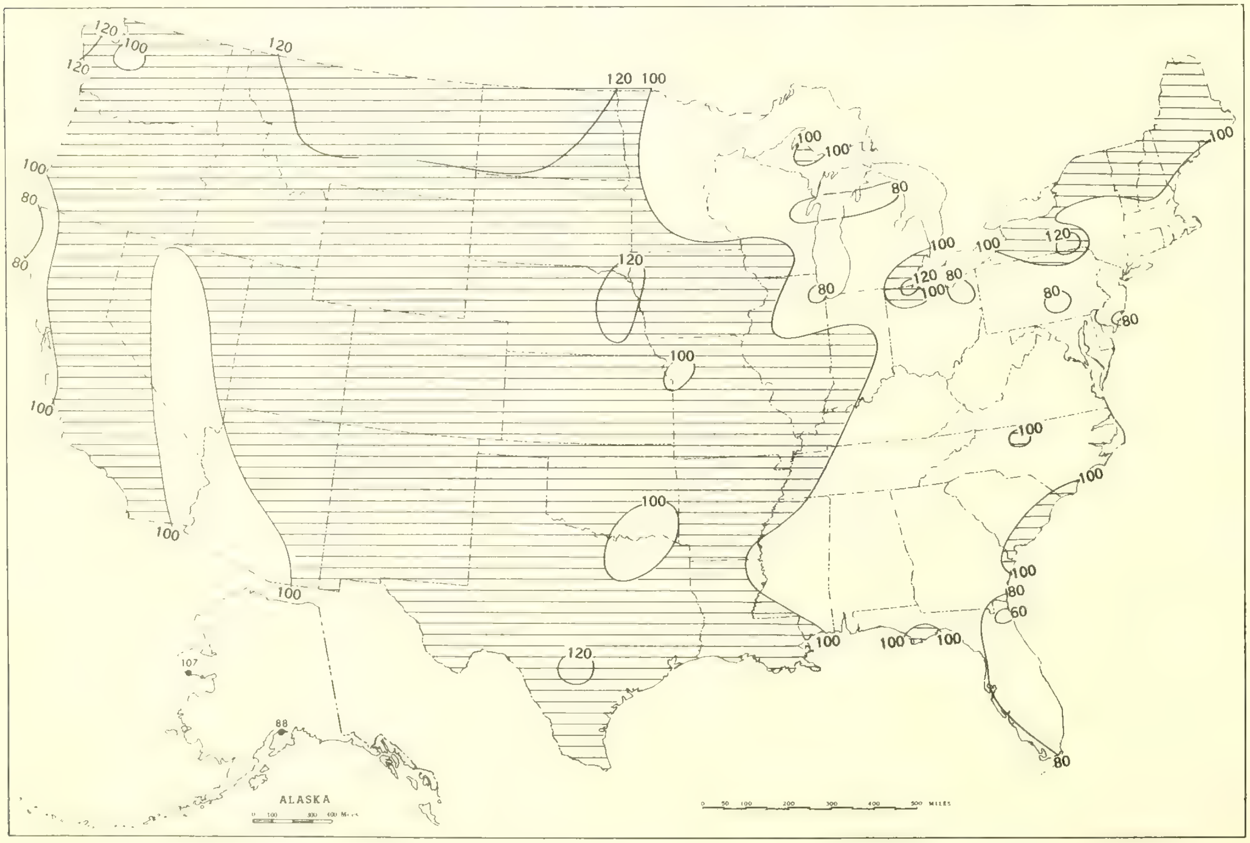


Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart VII. A. Percentage of Possible Sunshine, September 1960.

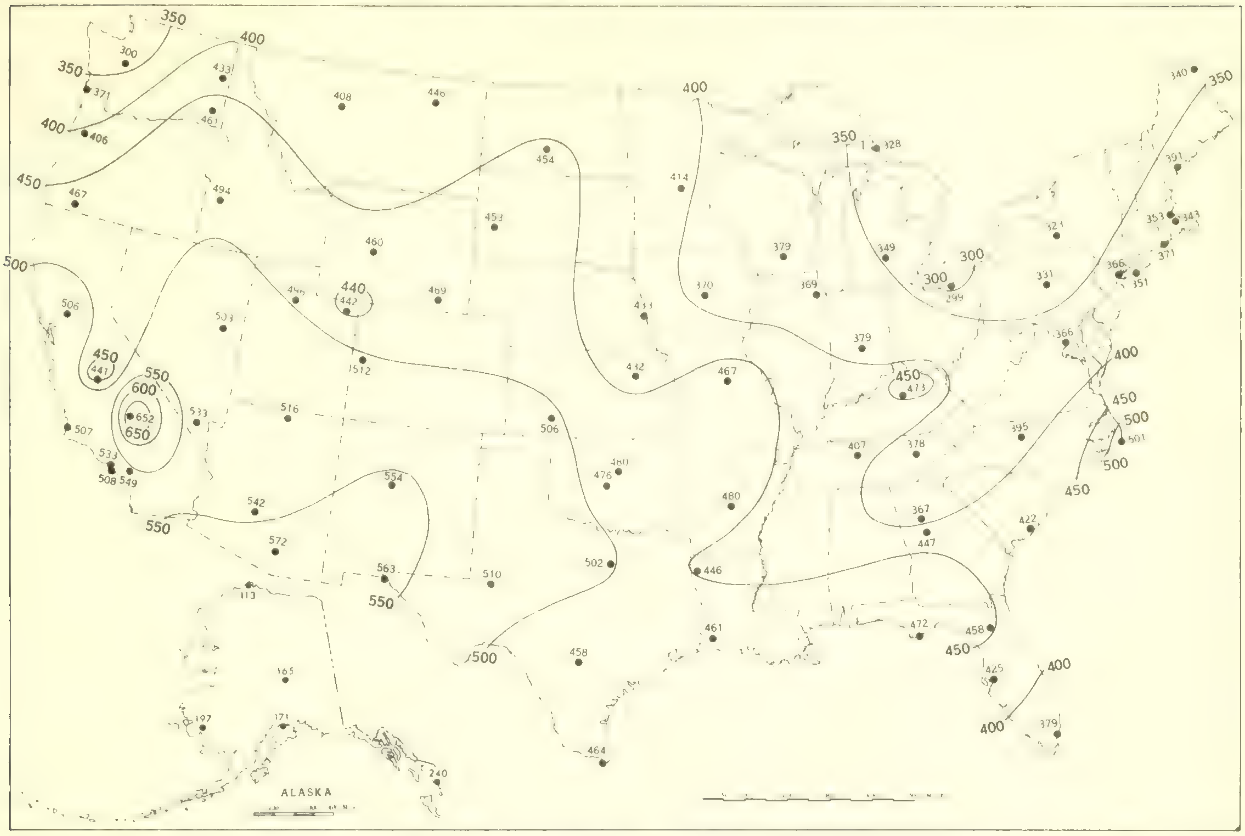


B. Percentage of Mean Monthly Sunshine, September 1960

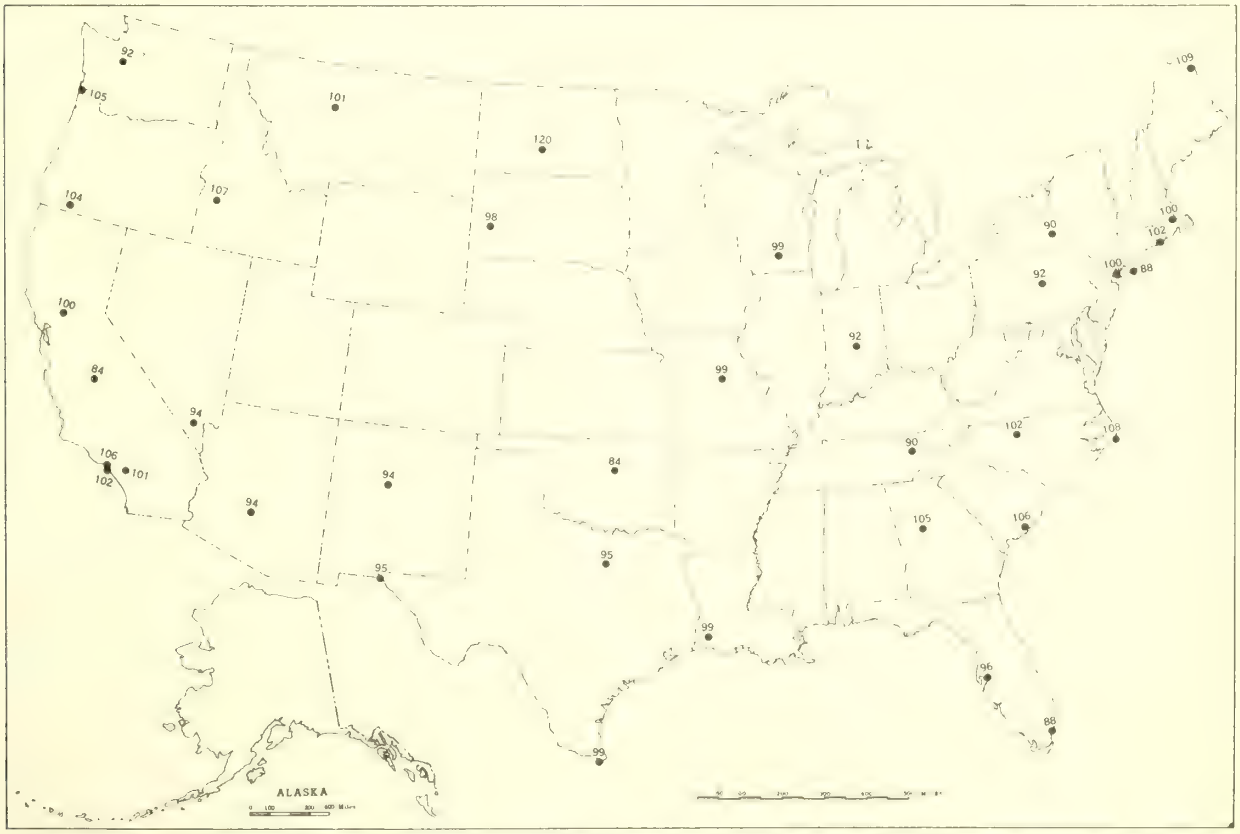


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, September 1960.



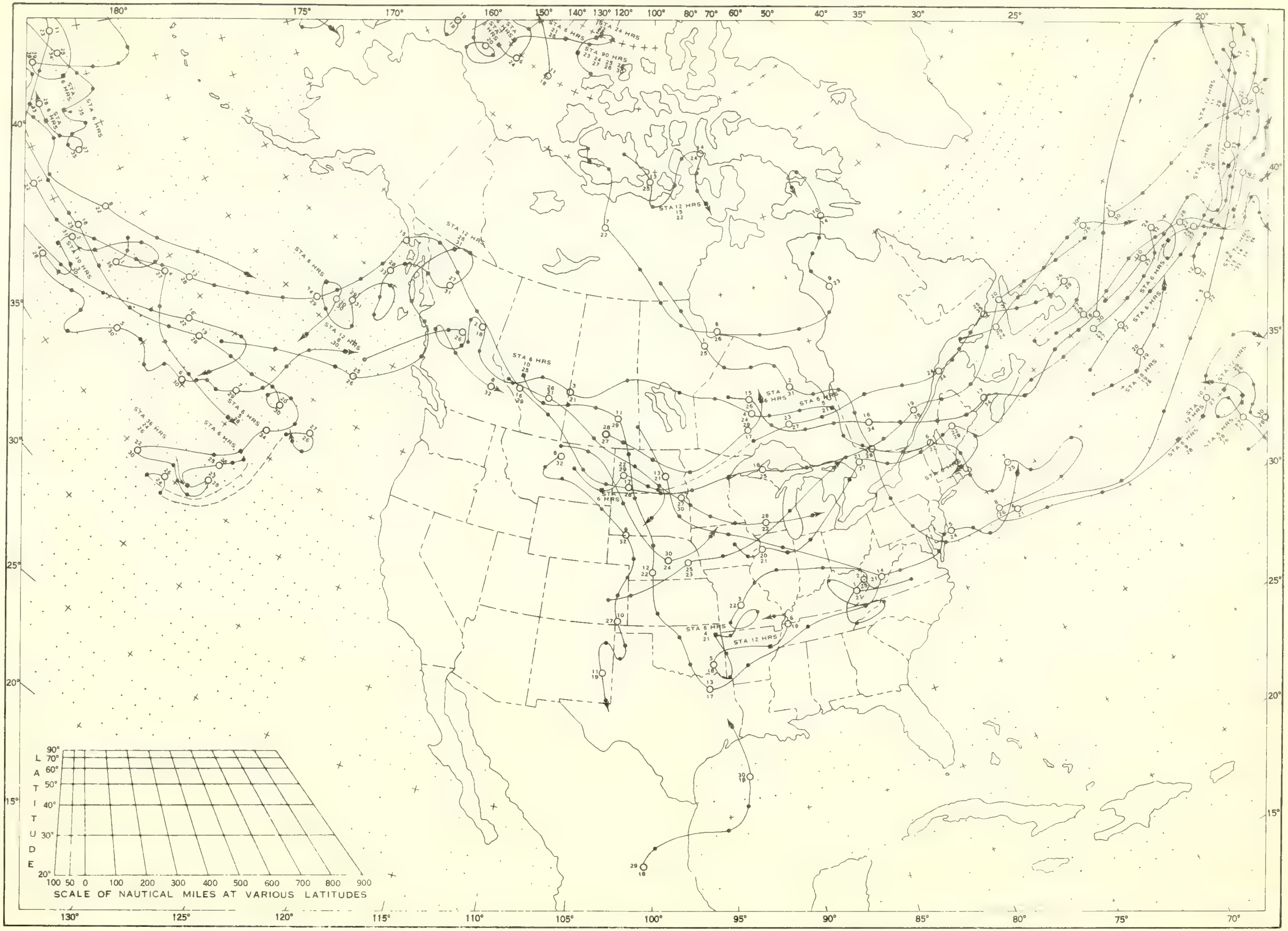
B. Percentage of Mean Daily Solar Radiation, September 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

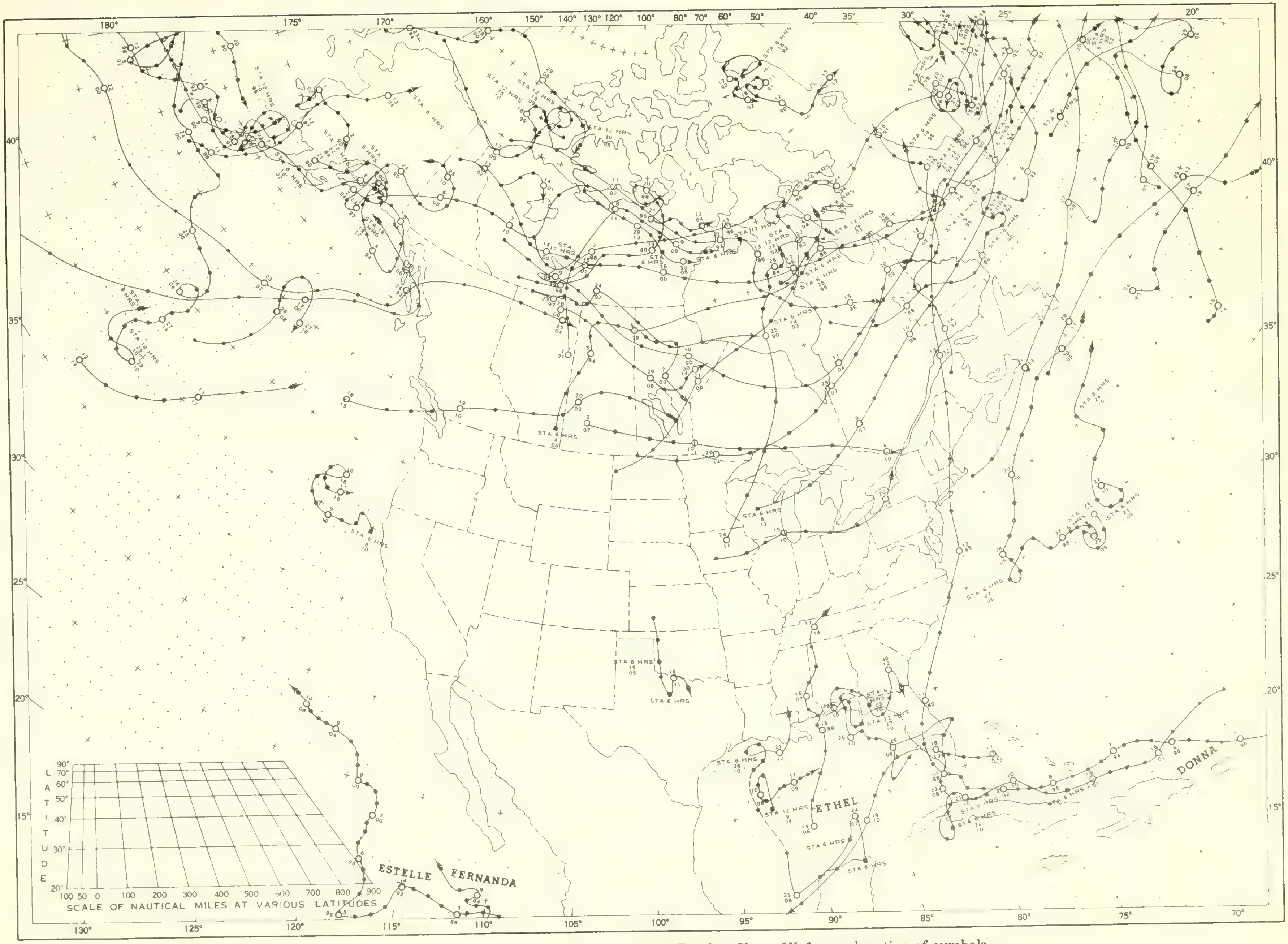
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, September 1960.



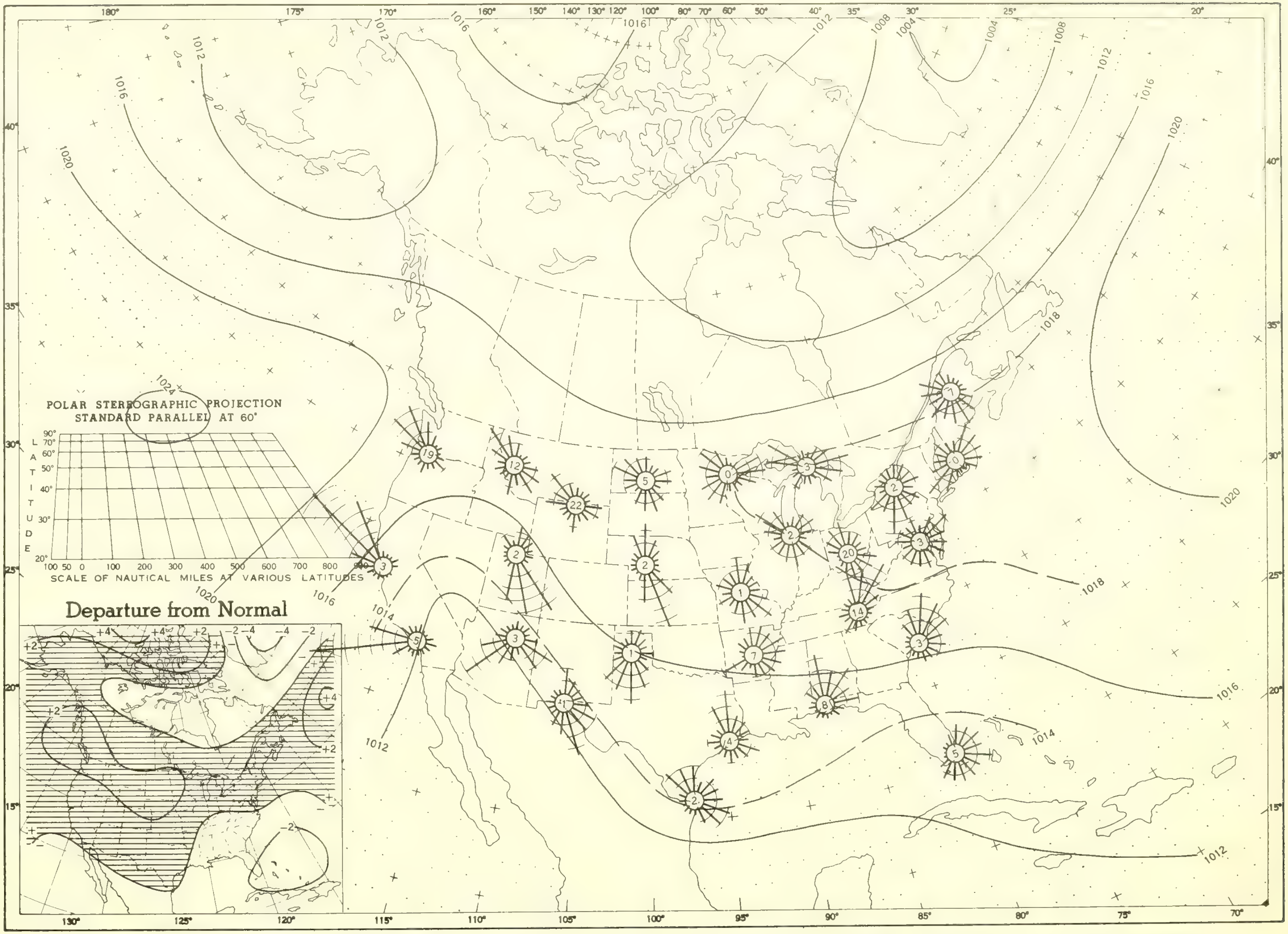
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, September 1960.



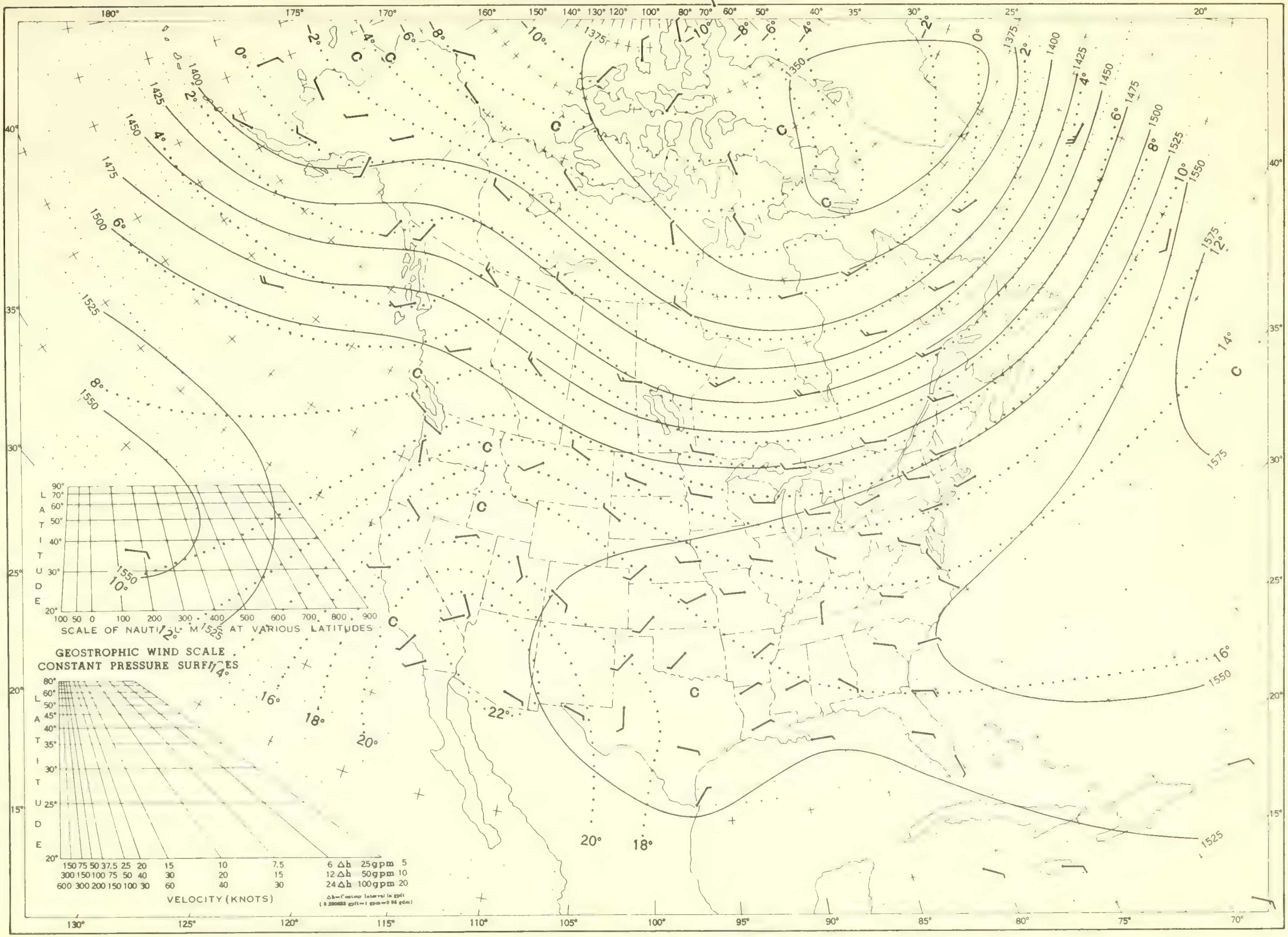
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, September 1960. Inset: Departure of Average Pressure (mb.) from Normal, September 1960.



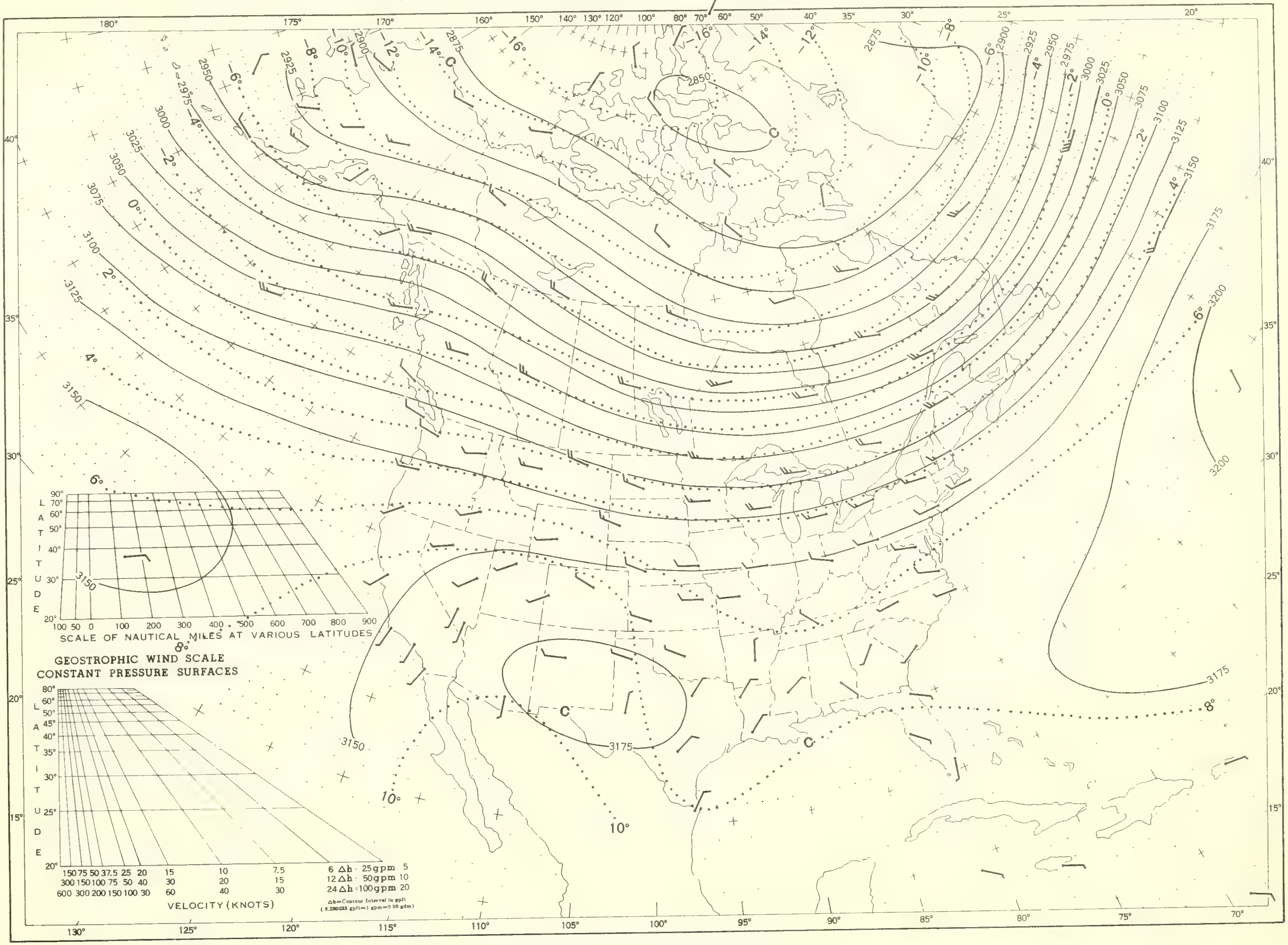
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° inter- [illegible] Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, September 1960. Average Height and Temperature, and Resultant Winds.



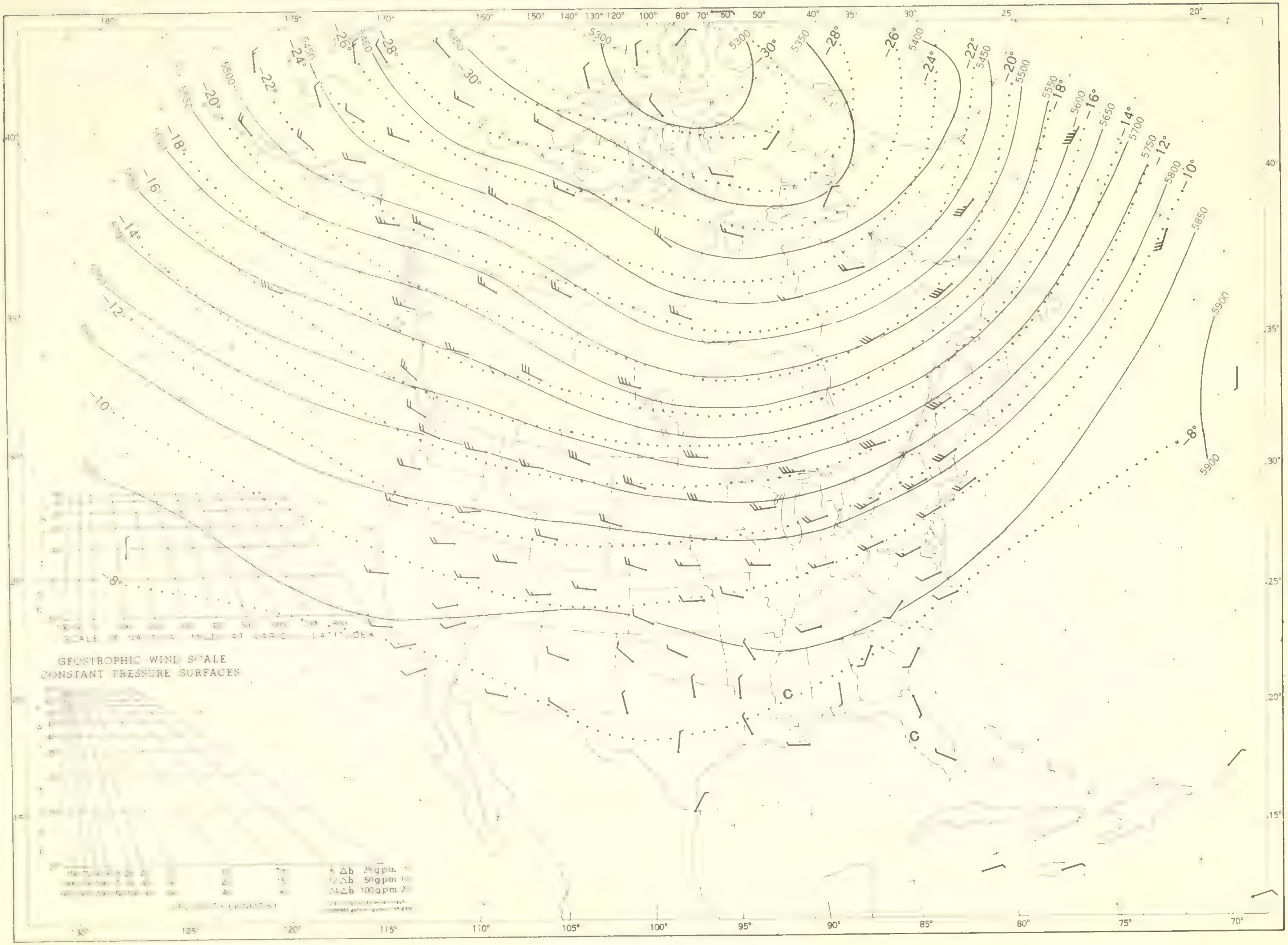
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, September 1960. Average Height and Temperature, and Resultant Winds.



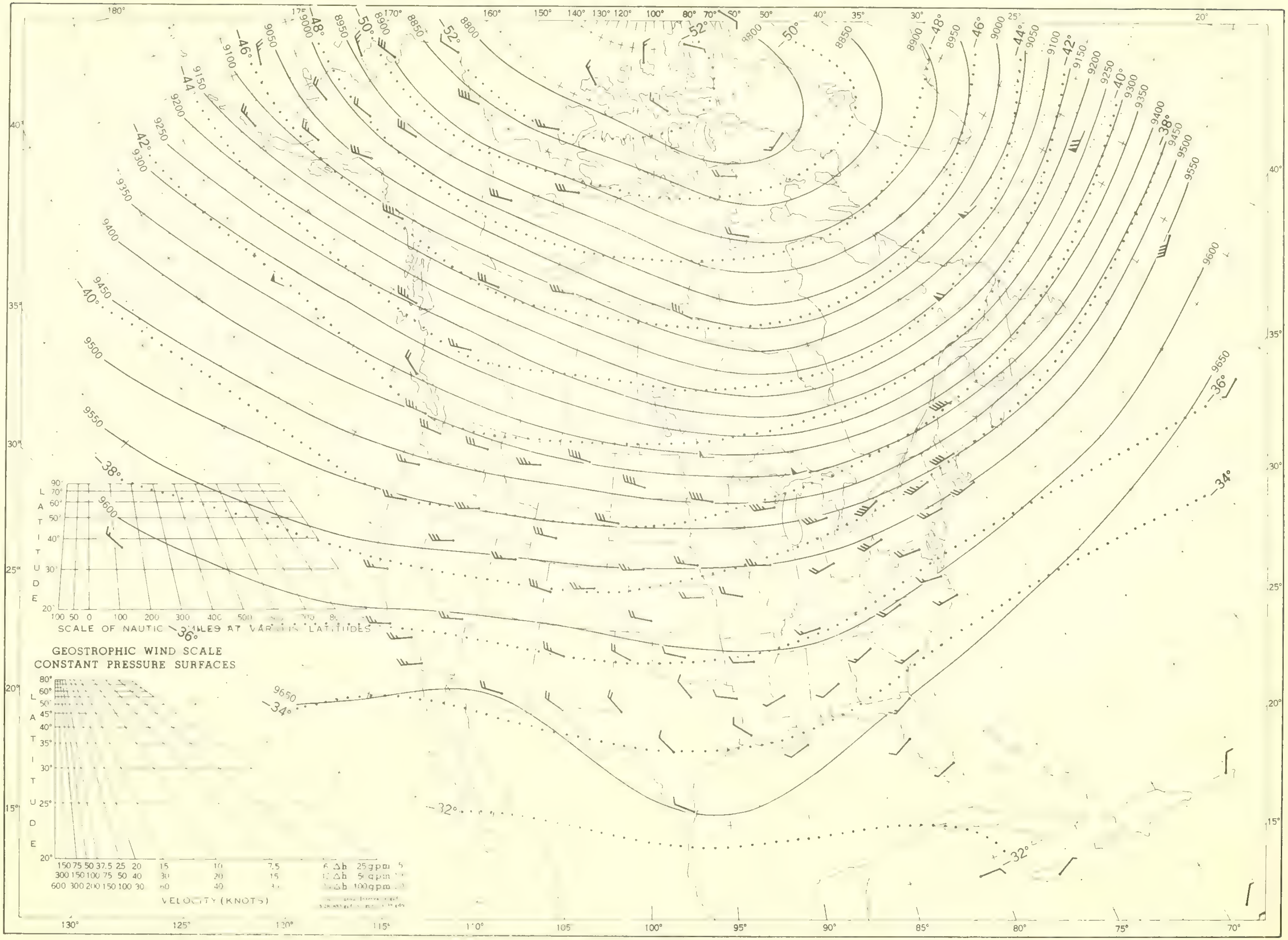
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, September 1960. Average Height and Temperature, and Resultant Winds.



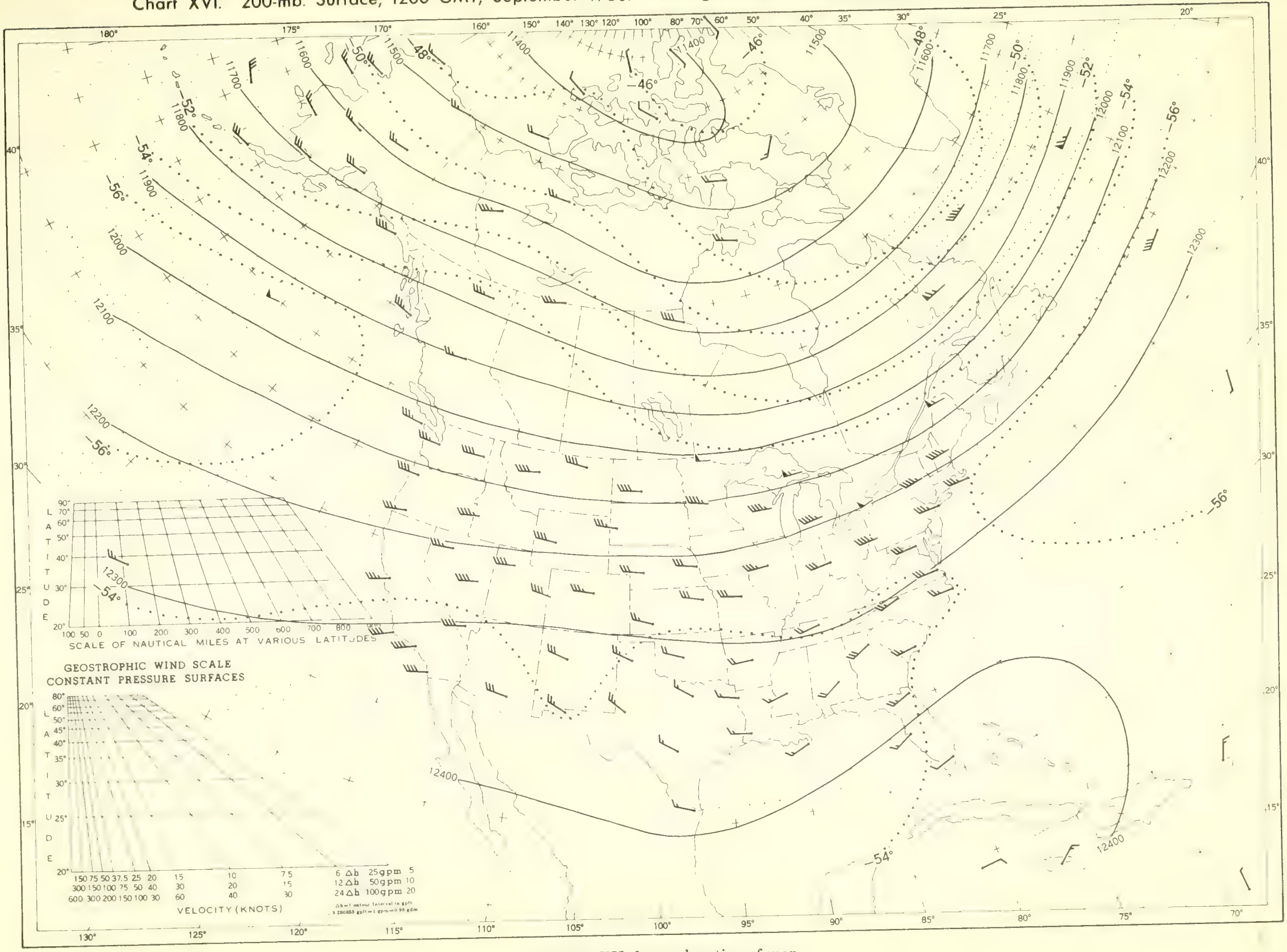
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, September 1960. Average Height and Temperature, and Resultant Winds.



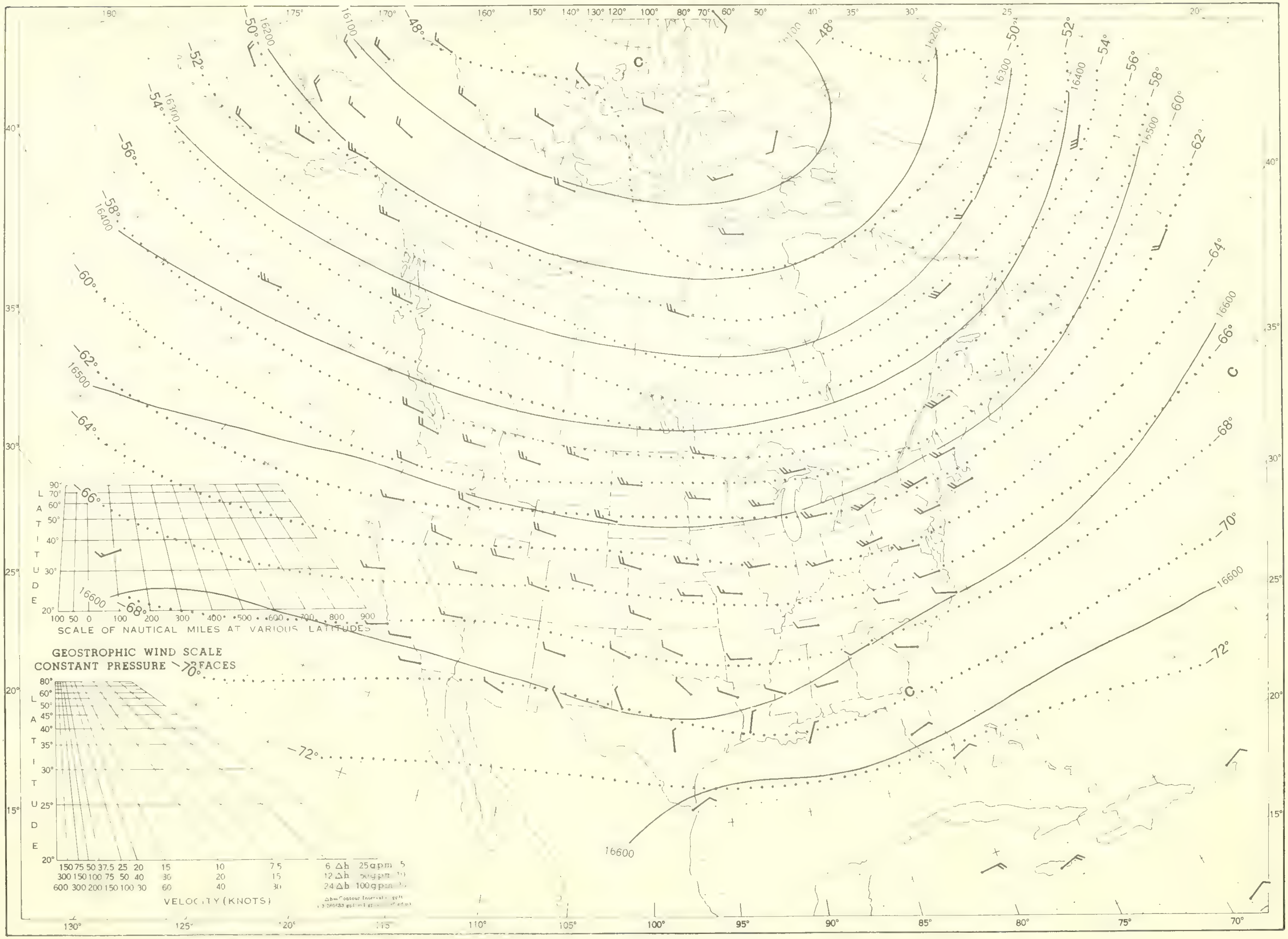
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, September 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, September 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

U. S. DEPARTMENT OF COMMERCE
FREDERICK H. MUELLER, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 10

OCTOBER 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

Unusually heavy precipitation with extensive flooding in Texas featured the weather of October in the lower Great Plains, Arizona, and New Mexico, but the month was extremely dry in the northern Great Plains and in the Great Basin and California. Temperatures for the month averaged near normal. There were no unusual hot or cold spells, and relatively few severe local storms. The first snowfall in some northern areas was earlier than usual.

TEMPERATURE.--Temperatures for the month averaged slightly below normal in the Far Western Interior, the upper Mississippi Valley, and the extreme Northeast, and slightly above normal elsewhere.

The first half of the month was relatively cool in the Far West, and abnormally warm in the East. Scattered frost and freezes occurred across the northern portion of the Nation during the first 10 days, and in the Far Western Interior extended southward over much of Utah.

The coldest weather east of the Rockies occurred from about the 19th to 25th. Huron, S. Dak., recorded 11° on the 19th, an early season low there, and freezing or frost was reported as far south as the Texas Panhandle and northern portions of Oklahoma, Arkansas, and Mississippi on the 20th. The first freeze of the season in the southern Appalachian region was on the 21st, with a low of 30° at Blairsville, Ga. North Carolina reported its first general light freeze of the season, and South Carolina had scattered light frost in the north and central portions on the 25th and 26th. At East Lansing, Mich., 19° on the 25th equaled the low there for October. On the 20th Topeka, Kans., had a late season low of 22°, and 24° at Kansas City, Mo., equaled the late season low there.

PRECIPITATION.--Heavy rainfall in the lower Great Plains, Arizona, and New Mexico ranged up to more than 600 percent of normal in southeast Texas and over 400 percent in central New Mexico. Heaviest amounts in these areas came about midmonth, although heavy amounts also fell in southern Texas later in the month. At Albuquerque, N. Mex., continuous rain from the early morning of the 15th until late afternoon of the 18th totaled 2.46 inches for the greatest storm total since 1933, and the total for the month, 2.88 inches, was the greatest amount for October since 1911. Roswell, N. Mex., had 3.53 inches for the month, and its second greatest 24-hour total for any October, 3.17 inches on the 15th and 16th. Amarillo, Tex., measured 4.82 inches for the month, a total which was more than 200 percent of normal and boosted the total for the first 10 months of 1960 to 36.02 inches, the greatest 10-month total ever recorded at Amarillo. Austin, Tex., measured 12.31 inches for the month, the second greatest total for October on record; and 7.22 inches of this total which fell on the 27th and 28th caused a major flood along the Colorado River, in which eight persons drowned and resulting damage in Austin alone was estimated at $2.5 million. The monthly total at Victoria, Tex., 17.25 inches, was 14.17 inches more than normal and the most for any month of record. This was the first month of the year with above-normal precipitation at Phoenix, Ariz.

In the northern Great Plains and some nearby areas, October was the second consecutive very dry month, and precipitation there for October was less than 25 percent of normal. Rapid City, S. Dak., for the second time on record, recorded only a trace for October. At Bismarck, N. Dak., 0.02 inch on the 29th ended a 40-day period without measurable precipitation. October was the ninth dry month this year at Glasgow, Mont., where the precipitation for the period January through October was only 55 percent of normal. Five consecutive weeks of below-normal precipitation in Minnesota created a high fire hazard in some areas and a fire in the Fort Ripley area burned about 13,000 acres of brush and timberland on the 22d. Much of California and the Great Basin of the Far West also received less than 50 percent of normal precipitation, and water reserves in Nevada were reported to be dangerously low at the end of the month.

SNOWFALL.--By the end of the first decade many higher mountains in the northern Rocky Mountains were covered with snow. During a storm in the Southwest near midmonth, some snow fell in the Great Basin, and heavy snow fell in the southern Rockies. This first heavy snowfall of the season in the mountains of northern New Mexico ranged up to 16 inches and closed a few passes. At Walsenburg, Colo., (over 6,000 feet elevation), an 18-inch snowfall damaged trees and overhead wires.

During the week ending the 24th, the first snow of the season occurred in many northern sections, with measurable amounts in northern Michigan but mostly only traces elsewhere. Snowfall was even more widespread during the last week of the month, with up to an inch in northwestern Kansas on the 26th, up to 8 inches in northwestern Pennsylvania, and several inches at elevations above 1,500 feet in New York State. In New England a band of snow extending from Rhode Island through New Hampshire ranged up to 6 inches in the latter State, and from 2 to 4 inches in parts of eastern Massachusetts. A trace of snow at Boston on the 24th was the earliest there in 20 years. In the southern Appalachians the first reported snow (trace) of the season fell at Clingmans Dome on the 28th.

CONDENSED CLIMATOLOGICAL SUMMARY

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Enterprise	94	3	New Market 2	28	21	Red Bay	8.84	Cottonton	0.33
Arizona	Yuma WB AP	105	6	Maverick	12	31	Bright Angel RS	5.68	3 Stations	.00
Arkansas	3 Stations	92	3+	4 Stations	23	20	Calico Rock	7.09	Abbott	1.27
California	Indio US Date Garden	107	7	White Mountain 2	4	10	Fort Dick 1NNE	5.51	67 Stations	.00
Colorado	3 Stations	90	9+	Fraser	-6	31	Rye	6.01	Sapinero 8E	.36
Connecticut	Waterbury Radio WBRY	88	15	Coventry	16	22	Salisbury	4.22	Waterbury Radio WBRY	1.34
Delaware	Middletown 2S	85	15	Milford 3WNW	25	26	Selbyville	6.20	Milford 3WNW	2.37
Florida	4 Stations	95	20+	2 Stations	40	26+	Miami Bay Front	10.79	Caryville	.95
Georgia	2 Stations	92	13+	Blairsville Exp Sta	22	25	Clayton 1N	5.92	Marshallville	.20
Idaho	Glenns Ferry	90	4	Idaho Falls 42NW WB	0	30	Burke 2ENE	4.08	Obsidian 3SSE	.01
Illinois	Harrisburg	90	2	Morris 5N	19	21	Mount Carroll	5.92	Pontiac	.78
Indiana	Johnson Exp. Farm	89	2	2 Stations	18	26+	Bedford 4SW	4.92	Richmond Airport	.62
Iowa	3 Stations	88	12+	Carroll 2SSW	9	20	Tipton	7.70	Estherville	.10
Kansas	2 Stations	94	1	Garnett	19	20	Florence	9.82	Fact	.86
Kentucky	Paradise Steam Plant	92	3	4 Stations	22	25	Uniontown Dam 49	5.56	Golden Pond 8N	.78
Louisiana	Grand Isle Lbsta	96	16	Holly Ridge 10N	31	22+	Oakdale	9.97	Baton Rouge WB AP	1.17
Maine	Sanford 2NNW	73	15	3 Stations	16	22	Ripogenus Dam	5.79	Damariscotta Mills	2.60
Maryland	Beltsville	86	16	Oakland 1SE	17	26	Snow Hill	7.71	Hancock Fruit Lab.	.50
Massachusetts	5 Stations	82	16+	Weston	17	22	Winchendon	4.39	Chatham Lt Sta	1.38
Michigan	Munising	84	10	Charlotte	14	25	Spalding	4.19	Cross Village	.76
Minnesota	8 Stations	83	13+	2 Stations	8	24	Two Harbors	2.96	Wells 1NW	.23
Mississippi	Brookhaven	94	2	do	28	21	Laurel	8.84	Carrollton 1SSW	1.47
Missouri	2 Stations	91	3+	do	17	20	Osceola	8.64	Dexter	1.22
Montana	Crow Agency	91	6	Redstone	-5	19	2 Stations	3.15	8 Stations	.00
Nebraska	Merriman	93	8	Clarkson	10	20	Friend	2.70	5 Stations	T
Nevada	N Las Vegas Doxarm	99	6	Wilkins	3	30	Pioche	2.48	2 Stations	.00
New Hampshire	Windham	79	15	Fabyan	14	22	Pinkham Notch	6.00	Concord WB Airport	2.09
New Jersey	4 Stations	85	16+	Layton 3NW	22	22	Mays Landing	3.86	Phillipsburg	1.04
New Mexico	Jal	95	8	Gavilan	8	31	Dawson	7.47	Jornada	.44
New York	4 Stations	84	16+	Lake Placid Club	19	2	Dannemora	5.53	Cairo	.93
North Carolina	3 Stations	89	3+	Banner Elk	20	21	Highlands 2S	8.93	Mount Gilead 4W	.90
North Dakota	do	91	8+	Medora 3NNE	-4	19	2 Stations	2.14	4 Stations	.00
Ohio	Newark Water Works	88	14	Tom Jenkins Dam	15	26+	Centerburg Water Wks	4.12	Toledo Blade	.75
Oklahoma	4 Stations	94	5+	Kenton	24	31	Altus	10.95	Bixby 2NE	1.68
Oregon	2 Stations	93	6+	Seneca	7	14	Valsetz	10.40	Alvord Ranch	T
Pennsylvania	York 3SSW Pump Sta	85	15	2 Stations	20	26	Chadds Ford	3.20	Bloserville 1N	.40
Puerto Rico	3 Stations, P. R.	95	30+	Garzas Dam, P. R.	53	29+	Garzas Dam, P. R.	19.42	Sion Farm, V. I.	.18
Rhode Island	Providence WB AP	81	15	Kingston	21	22	Woonsocket	3.41	Providence WB AP	2.24
South Carolina	Lake City	94	2	Chester 2WSW	27	25	Rainbow Lake	6.01	Antreville	.79
South Dakota	Vivian	95	7	Ralph 1N	2	19	Aberdeen FAA AP	1.16	2 Stations	.00
Tennessee	2 Stations	90	2+	Mountain City 2	20	25	Iron City	8.80	Cuba Landing	1.10
Texas	3 Stations	100	6	Stratford	24	31	Refugio	19.01	Presidio	.00
Utah	St George PH	94	1	Williams Ranch	5	30	Navajo Mountain	5.29	3 Stations	.27
Vermont	Bellows Falls	78	16	West Burke	15	22	Dorset 1S	5.96	Newfane	1.78
Virginia	Hog Isl Ltl Machipongo	87	15	Monterey	18	25	Back Bay Wildlife Rfg	5.78	Augusta Springs 1NE	.84
Washington	2 Stations	87	6	2 Stations	18	30+	Clearwater	17.68	White Swan	T
West Virginia	Spencer	88	2	Birch River 6SSW	14	25	Benson	4.30	Wardensville RM Farm	.75
Wisconsin	2 Stations	83	12+	Gordon 2ESE	9	24	Monroe 1W	4.86	Winter 6NNW	.72
Wyoming	do	89	7	Bondurant 3NW	-5	30	Bondurant 3NW	2.80	7 Stations	T

+ And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature								No. of days				Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile			No. of days (sunrise to sunset)				
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb.	°F	°F.	°F	°F.	°F		°F.		"		°F	%	In.	In.	In			In.	In.	M p. h.		M p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	991.1	1016.5	76	53	64.4	0.7	87	3	35	21	0	0	57	82	3.45	0.59	1.22	8	3	0.0	0	4.6	ENE	28	W	31+	11	10	10	5.3	66
Huntsville	605	993.1	1016.5	75	52	63.5	----	86	2	35	22	0	0	55	79	4.11	----	2.11	8	3	.0	0	4.8	ESE	*18	SE	30	10	8	13	5.8	--
Mobile	211	1013.3	1015.6	80	59	69.9	.8	89	2	40	21	0	0	60	77	3.81	.06	2.25	9	3	.0	0	7.2	N	*26	NW	31	12	11	8	4.8	--
Montgomery	195	1007.7	1015.9	79	57	68.1	1.7	87	12+	41	21	0	0	58	77	1.88	-.48	1.21	5	2	.0	0	6.0	N	21	W	31	12	12	7	4.8	67
ALASKA																																
Anchorage	90	993.9	999.0	43	31	37.0	1.0	51	3	21	19	0	17	28	73	.35	-1.52	.35	2	0	.5	T	7.6	NNE	*29	SSW	22	4	6	21	7.6	33
Annette	110	1003.7	1007.7	52	44	48.0	1.1	59	18+	36	28	0	0	45	89	21.63	7.25	3.34	25	0	T	T	12.2	SE	*39	SSE	14	0	3	28	9.4	--
Barrow	22	1010.5	1010.8	16	7	11.6	-5.5	33	3+	-8	31	0	31	8	82	.71	.19	.29	13	0	6.4	9	19.0	E	*35	W	18+	2	6	23	8.5	--
Barter Island	39	1007.1	1009.0	22	11	16.8	-.6	41	3	-8	9+	0	31	15	89	.62	-.41	.15	16	0	16.1	13	18.0	E	*46	E	23+	5	3	23	7.8	--
Bethel	125	998.0	999.6	35	23	28.9	-2.9	48	3+	8	28	0	28	26	87	1.27	-.48	.57	12	0	2.5	2	14.3	NE	*39	SW	3	1	5	25	8.5	--
Cold Bay	90	997.0	1000.9	45	36	40.7	.2	57	2	24	31	0	7	35	82	4.10	-.28	.65	23	0	2.9	T	18.6	WSW	*46	ESE	7	0	6	25	8.7	--
Cordova	40	997.0	998.5	49	33	40.5	-.3	56	2	25	19+	0	18	36	83	7.90	-7.66	2.13	20	0	.0	0	5.2	E	*37	SE	30	5	5	21	7.9	--
Fairbanks	436	986.1	1003.6	34	19	26.4	-1.1	48	22	3	30	0	30	21	80	.92	.00	.41	6	0	3.9	3	6.5	N	*26	SW	4	5	5	21	7.5	--
Juneau	17	1003.1	1003.9	48	39	43.5	1.6	53	22	35	17+	0	0	40	90	8.95	.48	1.58	28	0	.0	0	11.2	ESE	*35	ESE	30	0	1	30	9.6	12
King Salmon	44	996.6	998.8	42	28	35.0	-.8	54	1	17	16+	0	22	29	81	1.44	-1.08	.63	14	0	1.7	2	10.6	N	*30	E	21	2	5	24	8.3	--
Kotzebue	10	1002.4	1002.9	28	17	22.3	-3.2	43	3	4	28	0	28	16	77	1.53	.95	.54	10	0	4.3	3	13.2	NE	*38	E	20	10	5	16	6.6	--
McGrath	334	988.8	1001.9	32	20	25.7	-1.9	45	1	5	29	0	27	20	79	.67	-1.00	.45	6	0	.1	T	5.9	N	*31	SSW	4+	3	6	22	8.1	--
Nome	13	1000.7	1001.4	33	21	27.0	-3.0	43	22+	3	30+	0	27	19	72	1.27	-.43	.66	8	0	3.0	2	12.1	N	*52	SSW	3	4	10	17	7.3	28
Shemya	122	1003.4	1007.6	45	37	41.0	----	53	2	26	31	0	4	36	83	3.58	----	.61	20	0	1.3	T	25.5	WSW	*55	NE	28+	0	8	23	8.7	—
St. Paul Island	22	999.3	1000.7	41	33	37.3	-1.8	50	2	13	31	0	12	34	86	3.74	.62	1.17	18	0	2.0	1	----	---	--	---	--	0	9	22	8.5	--
Yakutat	28	1000.0	1000.9	48	36	42.3	.6	53	4+	27	28	0	9	39	88	21.95	2.02	3.31	29	0	.2	T	8.2	ENE	*28	ENE	24	0	4	27	9.3	--
ARIZONA																																
Flagstaff	6993	------	------	59	31	45.0	-1.1	74	6	17	31	0	21	--	--	3.57	2.11	1.27	8	3	.2	T	----	---	--	---	--	16	4	11	4.7	--
Phoenix	1109	973.2	1011.8	82	59	70.6	-.2	96	7+	47	31	6	0	49	51	.67	.27	.43	5	3	.0	0	5.8	NE	*21	NE	20+	18	8	5	3.4	81
Prescott	5014	847.3	1014.6	69	42	55.5	-1.5	84	7	32	31	0	1	39	61	2.16	1.48	.59	8	5	.0	0	7.9	SSW	29	S	9	17	4	10	4.1	66
Tucson	2584	924.1	1011.6	81	54	67.3	-2.3	92	7	45	31+	3	0	41	44	.71	.24	.62	3	2	.0	0	8.1	SE	31	NW	14+	23	5	3	2.2	89
Winslow	4880	852.0	1014.1	69	42	55.4	-.9	87	7	25	31	0	3	36	56	1.55	1.00	.78	8	1	.0	0	8.3	ESE	*35	SSW	10+	15	10	6	3.8	--
Yuma	199	1006.1	1011.5	91	62	76.3	-.1	105	6	54	31+	18	0	44	35	T	-.32	T	0	1	.0	0	7.4	N	26	S	2	22	7	2	2.3	86
ARKANSAS																																
Fort Smith	458	998.3	1015.2	77	53	64.9	1.0	91	9	32	20	2	1	58	82	1.76	-1.87	.60	8	4	.0	0	6.1	ENE	31	NW	30	8	12	11	5.7	57
Little Rock	257	1002.4	1015.8	74	53	63.5	-.6	86	3+	33	21	0	0	57	85	2.96	.15	1.08	9	3	.0	0	6.1	WSW	34	SE	30	9	8	14	5.8	54
Texarkana	361	------	1015.3	77	57	67.3	.3	87	2+	38	21	0	0	60	83	3.05	-.33	.94	10	7	.0	0	5.1	NE	--	---	--	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	997.3	1015.7	79	52	65.7	-.8	96	5	44	12	2	0	42	46	.08	-.29	.08	1	1	.0	0	5.7	E	*26	NE	6	24	4	3	1.9	--
Bishop	4108	874.4	1014.9	76	38	56.9	-.2	88	1	30	12+	0	4	--	--	.17	-.17	.15	2	0	.0	0	----	---	--	---	--	21	5	5	2.6	--
Blue Canyon	5280	839.8	1014.9	63	46	54.2	1.1	73	2	32	9	0	1	--	--	.83	-2.34	.62	4	0	.3	T	8.4	ENE	43	E	15	14	11	6	4.1	--
Burbank	699	987.8	1014.2	79	54	66.5	1.4	93	6	46	11	4	0	48	58	.01	-.51	.01	1	0	.0	0	6.0	SSE	*28	NE	15	22	7	2	2.3	--
Eureka (U)	43	1015.6	1018.0	61	48	54.6	.4	77	16	42	10	0	0	--	--	1.31	-1.39	.49	7	0	.0	0	5.5	Φ N	33	N	9	7	8	16	6.9	53
Fresno	331	1002.7	1014.8	78	48	63.1	-1.0	91	5	40	27+	1	0	42	51	.09	-.57	.09	1	0	.0	0	6.0	WNW	20	NW	26+	23	4	4	2.2	93
Long Beach	34	1013.5	1014.7	78	55	66.7	----	97	5	48	13	3	0	51	66	.01	----	.01	1	1	.0	0	6.1	WNW	*25	SW	9	17	13	1	3.1	--
Los Angeles (U)	312	------	------	78	59	68.0	1.4	93	5	52	31	3	0	53	67	.01	-.49	.01	1	1	.0	0	5.9	Φ W	36	N	15	19	12	0	2.9	83
Los Angeles	99	1010.5	1014.4	72	57	64.4	1.0	90	5	52	14+	1	0	55	74	T	-.43	T	0	0	.0	0	7.2	WSW	*20	WSW	17	18	12	1	3.0	--
Mt. Shasta (R)	3544	894.0	1018.0	66	39	52.4	1.4	86	1	29	27	0	3	--	--	2.28	-.33	1.98	4	0	.0	0	----	---	--	---	--	18	4	9	4.1	--
Oakland	3	1015.9	1016.4	70	52	60.6	.6	84	15	45	30+	0	0	46	66	.11	-.80	.10	3	0	.0	0	8.5	WNW	*39	N	9	12	12	7	4.4	--
Point Arguello(R)	367	1001.4	1014.8	65	49	57.0	----	89	5	41	15	0	0	--	--	1.70	----	1.61	7	0	.0	0	7.3	---	*26	NNW	26	16	7	8	4.6	--
Red Bluff	341	1003.1	1015.9	78	52	65.0	-.1	88	17+	44	12	0	0	39	48	.75	-.74	.74	3	1	.0	0	10.3	N	38	N	9	17	8	6	3.4	90
Sacramento	17	1013.5	1015.4	80	52	65.7	3.0	87	15	45	14	0	0	44	52	T	-.91	T	0	0	.0	0	6.9	NNW	36	NW	9	22	5	4	2.9	95
Sandberg (R)	4517	862.9	1013.2	68	50	58.8	.5	79	5	34	10	0	0	--	--	.00	-.66	.00	0	0	.0	0	12.2	N	*33	N	8	27	2	2	1.4	--
San Diego	19	1010.5	1013.8	74	58	66.0	1.0	91	5	53	15	1	0	53	71	.04	-.59	.03	2	0	.0	0	6.2	NE	29	S	9	21	9	1	2.7	79
San Francisco (U)	52	------	------	68	54	60.9	-.1	86	16	50	31	0	0	--	--	.48	-.59	.41	4	0	.0	0	6.7	Φ W	24	NW	9	--	--	--	----	71
San Francisco	8	1015.9	1016.6	70	51	60.6	1.2	83	16+	44	14	0	0	49	71	.28	-.64	.22	3	0	.0	0	9.7	WNW	33	N	9	13	11	7	4.3	--
Santa Maria	238	1006.8	1015.8	70	48	58.8	-1.2	89	5	41	24+	0	0	48	74	2.07	1.45	2.07	2	0	.0	0	6.3	WNW	*26	WNW	8	20	9	2	2.9	--
COLORADO																																
Alamosa	7536	772.4	1017.9	60	27	43.6	-.5	74	8+	10	31	0	23	--	--	1.28	.70	.64	6	0	6.1	2	----	---	--	---	--	18	4	9	3.8	--
Colorado Springs	6173	812.1	1017.1	64	37	50.5	-.9	80	8	21	30	0	7	28	50	1.97	1.34	1.60	7	0	1.9	1	8.7	N	*35	NNE	29	16	4	11	4.5	--
Denver	5292	838.5	1016.1	66	38	52.0	.5	84	8	24	30	0	4	30	50	2.46	1.45	1.59	6	1	4.6	1	7.5	SSW	36	NW	29	14	9	8	4.6	73
Grand Junction	4849	860.5	1016.4	65	43	54.0	-.4	79	7+	24	31	0	3	30	46	.49	-.35	.32	5	1	.0	0	9.2	ESE	41	NW	29	14	6	11	4.6	78
Pueblo	4639	857.1	1015.7	69	40	54.3	1.5	84	8	26	30	0	4	33	53	2.19	1.49	1.12	7	0	T	T	7.5	W	65	N	29	14	8	9	4.5	79
CONNECTICUT																																
Bridgeport	7	1015.4	1016.3	65	46	55.2	.8	80	11	33	22	0	0	44	69	2.26	-.57	.86	8	2	T	0	11.0	NE	36	WNW	25+	7	12	12	6.1	--
Hartford	169	1009.7	1015.4	63	38	50.8	-2.1	84	15	24	22	0	8	41	72	2.30	-.50	1.53	7	2	T	0	7.5	NW	35	NW	24	10	9	12	5.9	64
New Haven	6	1015.3	------	64	43	53.7	.4	78	11	30	22	0	2	--	--	2.69	-.31	1.24	8	2	T	T	8.5	---	25	SW	24	7	11	13	6.0	65
DELAWARE																																
Wilmington	78	1012.9	1016.3	65	45	55.3	-.9	81	15	30	26	0	2	46	74	2.85	-.14	1.43	9	0	T	T	8.3	WNW	29	WNW	24	9	9	13	5.9	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	67	51	59.0	.6	82	15+	36	26	0	0	--	--	2.01	-.96	1.20	8	--	---	--	----	---	--	--	--	--	--	--	----	--
Wash. Nat'l. AP	14	1012.4	1016.9	67	50	58.7	.5	82	11	34	26	0	0	48	72	2.54	-.31	1.54	10	0	.0	0	8.5	N	33	NW	24	10	4	17	6.1	54
FLORIDA																																
Apalachicola (U)	13	1012.7	------	81	65	73.0	2.0	86	10	52	22+	0	0	--	--	1.72	-.83	.95	6	1	.0	0	6.6	---	20	NW	20	17	8	6	4.3	90
Daytona Beach	31	1013.9	1015.8	82	66	74.4	1.0	89	7	52	24	0	0	67	82	.97	-4.92	.33	5	1	.0	0	7.3	NW	*21	SE	6	10	13	8	5.4	--
Fort Myers	15	1013.5	------	88	70	78.8	2.5	91	9	63	24	8	0	--	--	3.01	-1.14	.74	10	9	.0	0	6.0	--	*25	WNW	31	8	16	7	5.5	--
Jacksonville	24	1014.3	1015.8	83	64	73.1	2.2	88	19+	50	23	0	0	64	80	2.95	-1.76	1.31	6	3	.0	0	7.5	NW	33	S	6	13	11	7	4.7	79
Key West	5	1012.4	1013.6	87	77	82.2	2.7	91	28+	71	6	5	0	73	76	3.78	-3.00	1.17	12	8	.0	0	8.9	ENE	32	SE	6	5	18	8	5.9	61
Lakeland (U)	214	------	------	85	68	76.8	2.5	91	1	61	24+	1	0	-	--	3.48	.95	1.16	9	6	.0	0	5.9	---	--	---	--	9	16	6	4.9	70
Miami	7	1012.7	1013.9	86	73	79.5	1.6	89	20+	69	30	0	0	71	80	10.54	2.31	2.34	16	14	.0	0	7.1	E	*23	SW	31	1	20	10	6.4	--
Miami Beach	9	------	------	85	75	80.2	1.5	89	21+	70	11	0	0	--	--	7.00	-.07	4.18	17	--	.0	0	----	---	¢29	NE	14	¢5	¢18	¢8	¢5.9	¢52
Orlando	106	1010.5	1014.9	87	68	77.2	2.5	91	1	57	24	6	0	67	78	3.17	-.74	1.75	8	4	.0	0	6.7	NNE	*18	S	6	10	13	8	5.2	--
Pensacola (U)	13	------	------	80	63	71.6	1.3	86	16+	45	21	0	0	--	--	5.86	1.98	4.24	7	2	.0	0	†9.3	---	23	SE	5	--	--	--	----	68
Tallahassee	64	1012.5	1015.3	81	61	71.1	2.3	86	5+	48	23	0	0	62	80	3.28	.90	1.89	7	3	.0	0	4.3	NNW	*17	NNW	20	11	12	8	4.9	--
Tampa	19	1013.3	1015.0	86	68	77.0	2.4	93	3	57	24	3	0	66	76	2.28	-.86	.94	6	4	.0	0	8.9	N	*23	SE	31	13	11	7	4.9	67
West Palm Beach	15	1013.1	1014.2	87	72	79.1	1.5	90	20+	66	25	2	0	71	80	7.43	-.89	1.89	15	8	.0	0	7.9	ENE	*29	SE	31+	5	13	13	6.6	--
GEORGIA																																
Athens	798	987.2	1016.4	76	53	64.4	.5	87	3	38	26+	0	0	56	80	2.30	-.64	1.03	7	1	.0	0	5.7	NE	*23	WSW	23+	13	8	10	4.8	--
Atlanta	975	974.9	1016.3	75	56	65.7	2.3	84	3	42	25+	0	0	57	79	2.57	-.03	.75	9	6	.0	0	8.3	NW	*23	NW	20	13	8	10	4.9	65
Augusta	143	1009.0	1015.8	80	54	66.9	2.2	90	3	33	26	1	0	58	80	.95	-1.58	.39	7	2	.0	0	4.3	SE	*20	WNW	24	13	9	9	5.1	--
Columbus	385	1001.9	------	80	55	67.3	1.5	87	5+	38	26	0	0	--	--	1.13	-.91	.93	5	0	.0	0	5.5	---	*21	W	31	13	9	9	4.7	--
Macon	356	1002.2	1015.8	80	56	68.2	1.6	89	3+	38	26	0	0	57	74	.30	-1.97	.14	5	0	.0	0	6.4	SE	22	S	19	13	9	9	4.9	67
Rome	637	993.3	------	74	49	61.7	-.5	86	3	34	22	0	0	53	82	4.40	1.54	1.93	10	6	.0	0	3.4	---	--	---	--	11	9	11	5.4	--
Savannah	48	1013.5	1016.0	80	59	69.3	2.3	88	4	41	26	0	0	61	79	1.44	-1.01	.94	3	3	.0	0	7.3	NNE	18	NE	22	13	13	5	4.4	68
Thomasville	283	------	------	83	61	71.5	2.2	90	5+	47	21	2	0	--	--	1.19	-1.08	.58	6	1	.0	0	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

OCTOBER 1960

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft	Mb	Mb.	°F	°F.	°F.	°F.	°F.		°F				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
HAWAII																																
Hilo	31	1013.5	1014.8	84	67	75.3	0.8	90	1	64	14	1	0	67	79	10.69	-0.33	4.41	15	0	0.0	0	9.1	SW	*30	SE	1	5	13	13	6.6	45
Honolulu	7	1015.2	1015.7	86	73	79.3	1.1	90	18+	68	15	3	0	67	68	1.16	-.73	.71	6	0	.0	0	10.3	ENE	29	NE	25	4	17	10	5.9	74
Lihue	115	1010.5	1015.6	84	72	77.8	1.3	86	18+	66	15	0	0	69	77	5.44	.81	2.02	20	3	.0	0	10.7	NE	23	NE	25+	5	16	10	6.1	60
IDAHO																																
Boise	2842	921.8	1018.3	66	39	52.7	.1	86	6	26	27	0	7	34	54	.49	-.45	.30	6	1	T	0	7.0	SE	29	W	26	12	9	10	4.8	75
Idaho Falls 46W (R)	4933	850.0	1019.0	60	27	43.6	-.3	79	6+	6	30	0	22	--	--	.23	-.45	.12	3	0	.0	0	6.9	WSW	@27	NE	9	--	--	--	----	--
Idaho Falls 42NW (R)	4790	------	------	60	25	42.5	-1.8	80	6	0	30	0	26	--	--	.24	-.23	.21	4	--	---	--	5.2	SSW	@21	SW	26	--	--	--	----	--
Lewiston	1413	966.5	1018.3	63	40	51.6	-.3	80	5	30	29	0	2	--	--	1.42	.21	.87	8	0	.0	0	----	---	--	---	--	10	7	14	5.9	--
Pocatello	4444	864.5	1018.6	62	34	47.8	-1.5	81	6+	16	30	0	13	29	53	.53	-.51	.23	7	1	T	0	9.8	SW	33	SW	26	15	4	12	4.8	72
ILLINOIS																																
Cairo (U)	314	1002.7	------	71	53	62.0	.0	84	2	35	20	0	0	--	--	2.72	-.25	.87	12	5	.0	0	6.7	Φ N	29	SW	30	9	5	17	6.1	65
Chicago (O'Hare)	656	990.9	1016.0	64	44	54.0	----	82	12	27	21	0	4	43	71	1.33	----	.52	7	3	T	0	10.7	NNW	*37	SSW	22	10	8	13	5.3	--
Chicago (Midway)	610	992.9	1016.1	65	46	55.6	1.5	84	12	30	21+	0	4	43	68	1.71	-.85	1.00	7	3	T	0	9.1	NW	31	SW	22	10	8	13	5.5	56
Moline	589	992.9	1015.4	65	42	53.8	-.1	84	12	24	20	0	3	44	74	4.91	2.64	2.81	7	5	.0	0	7.0	SE	30	S	31	10	11	10	5.4	62
Peoria	654	993.6	1016.3	65	43	54.0	-.7	80	12	22	20	0	3	44	72	1.43	-1.01	.92	6	1	.0	0	8.3	S	29	SW	22	11	8	12	5.2	62
Rockford	728	988.2	1015.8	63	41	51.8	.0	81	12	24	21	0	4	42	73	5.13	2.52	2.56	7	3	T	0	8.5	S	*26	SE	31	11	8	12	5.5	--
Springfield	589	992.6	1015.9	69	45	56.9	1.0	84	5	25	20	0	3	45	69	2.54	-.67	1.26	7	1	.0	0	9.8	SSW	40	SW	31	10	11	10	5.4	63
INDIANA																																
Evansville	383	1000.0	1016.1	71	47	58.9	-.4	86	2	29	21	0	3	49	74	2.29	-.53	.80	9	4	.0	0	7.6	NW	34	S	30	8	7	16	6.3	63
Fort Wayne	801	985.1	1016.5	64	42	53.0	-.2	80	13+	23	25	0	5	43	71	1.72	-.90	.47	6	2	.0	0	10.2	ENE	39	SW	31	11	9	11	5.2	69
Indianapolis	793	986.1	1016.4	67	43	54.7	-1.2	81	12+	27	25	0	5	44	72	1.61	-.91	.60	6	2	.0	0	7.1	N	30	SW	31	10	8	13	5.9	65
South Bend	768	987.5	1015.9	63	43	53.0	.1	81	12	28	25	0	3	44	76	2.44	-.55	1.50	7	3	T	0	8.1	SSW	*26	SSW	31	11	6	14	5.7	--
IOWA																																
Burlington	694	989.8	1015.9	67	43	55.3	.3	85	12	21	20	0	3	43	68	3.02	.07	1.89	7	3	T	0	9.8	SE	*31	W	31	13	9	9	4.7	79
Des Moines	948	985.1	1016.7	65	43	54.2	-.3	86	11	20	20	0	2	42	68	2.11	-.09	1.06	7	2	T	0	9.4	SE	40	NW	31	13	7	11	5.0	66
Dubuque	1065	990.2	1016.0	61	41	51.0	.1	78	12	23	24+	0	5	40	68	4.74	2.54	2.30	9	4	.0	0	----	---	--	---	--	10	7	14	5.5	--
Sioux City	1094	974.3	1015.7	68	40	54.3	1.7	88	11	16	20	0	4	38	60	.90	-.54	.90	1	2	.0	0	9.6	SE	34	NW	31	14	8	9	4.6	73
Waterloo	870	983.4	1015.8	63	38	50.3	-1.6	82	12+	21	24+	0	6	40	73	3.51	1.35	1.35	5	3	.0	0	6.9	SE	*30	NNW	31	13	5	13	5.1	--
KANSAS																																
Concordia (U)	1375	965.1	------	70	48	58.8	1.1	84	11+	29	20	0	2	--	69	1.37	-.35	.86	4	2	.0	0	6.4	Φ S	25	NW	30	17	8	6	3.9	75
Dodge City	2594	927.2	1015.0	70	47	58.7	.9	87	5	32	31+	0	3	45	66	2.04	.47	.95	6	4	.3	T	14.8	SSE	49	NW	30+	12	7	12	5.2	64
Goodland	3645	888.3	1015.1	70	39	54.5	2.4	89	1	26	31+	0	4	36	57	2.05	1.01	1.64	7	2	1.0	1	12.0	SSE	*31	NNW	29	13	9	9	4.5	--
Topeka	877	979.3	1015.3	71	46	58.4	.5	87	11	22	20	0	2	49	75	3.03	.47	1.28	10	6	.0	0	9.9	ESE	34	N	19	14	4	13	5.0	64
Wichita	1321	965.8	1014.3	73	49	61.0	.8	89	5	32	20	0	1	51	73	5.03	2.85	2.30	11	7	.1	T	12.1	S	38	N	30	11	8	12	5.4	63
KENTUCKY																																
Lexington	979	981.0	1017.0	69	49	58.7	.8	81	2	31	25	0	2	48	75	2.50	.06	1.30	8	2	.0	0	7.2	S	--	---	--	7	10	14	6.1	--
Louisville	474	996.7	1016.3	69	46	57.5	-1.1	83	2	28	25	0	4	49	78	1.58	-.87	.55	10	3	.0	0	4.5	N	23	S	31	8	9	14	6.4	47
LOUISIANA																																
Alexandria	107	1010.8	1015.3	79	56	67.4	----	88	9+	37	22	0	0	61	83	4.44	----	2.26	8	6	.0	0	4.5	NNE	--	---	--	9	9	13	5.9	--
Baton Rouge	64	1012.5	1015.6	80	59	69.2	-.4	89	2	40	22	0	0	61	81	1.17	-1.81	.36	8	2	.0	0	7.2	NE	--	---	--	11	9	11	5.8	--
Lake Charles	12	1013.2	1014.7	80	61	70.6	.3	87	2+	45	21	0	0	62	80	5.17	1.73	1.40	8	8	.0	0	3.4	E	*20	NW	18	6	12	13	6.6	--
New Orleans (U)	9	------	------	81	67	73.7	.9	89	2	49	21	0	0	--	74	3.95	.29	1.04	8	3	.0	0	5.1	---	18	NE	20+	9	15	7	5.5	59
New Orleans	3	1012.9	1015.2	81	60	70.5	-.9	89	3	43	22	0	0	62	80	4.90	1.72	2.58	6	4	.0	0	5.8	NE	*21	NNW	31+	13	6	12	5.0	--
Shreveport	252	1006.4	1015.7	78	58	68.4	-.1	88	3+	40	21	0	0	59	78	2.34	-.76	.42	10	4	.0	0	8.2	SSE	--	---	--	10	11	10	5.3	71
MAINE																																
Caribou	624	989.7	1013.2	51	32	41.8	-.3	62	29	21	22	0	17	35	78	3.41	-.06	1.31	13	1	T	0	11.3	WNW	*31	WSW	6	5	12	14	6.6	--
Portland	61	1010.9	1014.9	58	35	46.2	-2.2	71	11	20	22	0	13	38	76	2.92	-.06	1.51	8	2	.0	0	9.8	WNW	30	SE	19	11	6	14	5.8	56
MARYLAND																																
Baltimore (U)	14	------	------	68	52	60.1	.8	85	11	38	26	0	0	--	--	2.07	-1.30	1.33	6	--	----	--	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1011.9	1016.9	67	46	56.6	.1	84	15	31	26	0	1	46	70	2.12	-1.25	1.12	8	0	.0	0	8.8	WNW	36	W	24	11	6	14	5.6	51
Frederick	294	------	------	66	41	53.6	-3.2	83	11	26	26	0	3	--	--	1.34	-1.95	.65	6	0	T	0	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.(R)	629	990.7	------	60	43	51.4	----	80	15	30	21	0	3	--	71	3.52	.07	1.41	10	--	3.0	3	15.2	WNW	43	S	19	--	--	--	----	57
Boston	15	1009.9	1014.6	62	46	53.9	-1.1	76	11	31	22	0	1	41	67	2.48	-.31	1.18	8	1	T	T	12.4	WNW	36	WNW	25	9	9	13	6.2	64
Nantucket	43	1014.3	1014.8	61	46	53.4	.4	69	3	33	22	0	0	46	76	3.08	-.52	2.02	5	1	T	0	13.5	NE	35	SW	25	7	11	13	6.6	58
Pittsfield	1170	------	------	59	36	47.4	-.1	76	15	22	22	0	12	--	--	1.88	-1.05	.90	8	--	T	T	----	---	--	---	--	--	--	--	----	--
Worcester	986	977.4	1014.2	58	40	48.8	-1.8	76	15	28	22	0	4	39	73	2.65	-.52	1.27	9	2	3.6	3	8.7	WSW	*24	NE	29	9	9	13	6.0	--
MICHIGAN																																
Alpena	689	989.8	------	58	34	46.3	-1.7	80	10	23	1	0	16	39	74	2.15	-.24	.56	12	1	.9	1	5.9	Φ W	29	NW	6	7	11	13	6.3	49
Detroit (City AP)	619	989.5	1016.6	63	44	53.2	.3	81	13	30	25	0	2	41	68	2.17	-.12	1.16	7	3	T	T	8.9	N	35	NW	24	10	8	13	5.6	57
Detroit (M. Wayne Co.)	630	992.2	1016.5	63	42	52.6	----	81	13	26	25	0	4	42	72	2.31	----	1.08	9	3	.0	0	9.1	WSW	--	---	--	10	9	12	5.5	--
Detroit (Willow Run)	722	987.5	1016.1	64	43	53.3	.8	80	13	26	25	0	4	42	69	2.45	.28	1.51	6	3	.0	0	10.8	NE	*32	NW	23	9	9	13	5.9	--
Escanaba (U)	594	992.2	------	56	40	47.7	.6	82	10	26	21	0	6	--	75	2.72	.68	1.48	8	1	T	T	9.4	---	49	NW	23	4	11	16	6.9	44
Flint	761	988.5	1016.6	61	38	49.5	-.9	79	13	20	25	0	7	41	75	1.35	-1.13	.40	6	3	T	0	7.6	SW	*25	SE	31	8	12	11	5.9	--
Grand Rapids	681	990.9	1016.3	63	40	51.5	1.2	78	13	20	25	0	5	41	71	1.06	-1.45	.35	7	2	T	0	8.0	S	29	NW	23	8	8	15	6.5	44
Lansing	852	983.7	1016.2	62	38	50.0	-.5	80	13	19	25	0	6	40	73	1.41	-1.04	.41	7	2	T	T	10.5	S	38	NW	23	7	9	15	6.5	49
Marquette (U)	677	986.5	------	56	41	48.4	.9	83	10	27	25+	0	6	--	69	2.73	.47	1.11	11	1	5.5	2	7.8	Φ NW	32	NW	23	5	5	21	7.4	51
Muskegon	627	992.6	1016.1	62	40	50.7	.4	74	13	21	25	0	3	43	76	2.54	.02	1.08	9	4	T	0	7.5	W	*25	W	23	9	11	11	5.8	--
Sault Ste. Marie	721	991.9	1014.9	54	38	45.6	1.2	71	10	22	25	0	8	39	81	2.04	-.94	.65	11	3	.6	T	9.4	WNW	*35	WNW	23	3	6	22	8.1	37
MINNESOTA																																
Duluth	1409	972.9	1014.8	55	36	45.3	1.3	77	10	17	24	0	9	35	72	2.19	-.03	1.18	7	2	T	T	12.9	WNW	47	NW	23	9	7	15	5.9	55
Intern'l Falls	1179	972.2	1014.2	54	33	43.4	1.5	80	9	14	24	0	14	34	72	1.94	.13	.85	10	2	.1	T	7.4	NW	*23	NW	23+	8	7	16	6.6	--
Minneapolis	830	981.4	1015.5	61	37	48.7	-1.7	81	12	17	24	0	10	36	66	.31	-1.34	.29	3	0	T	0	9.1	SE	32	W	22	13	8	10	4.5	70
Rochester	1017	967.5	1015.7	60	39	49.3	.2	79	12+	19	24	0	7	38	69	1.12	-.57	.60	4	1	T	0	10.0	S	--	---	--	11	8	12	5.3	--
St. Cloud	1034	976.6	1015.2	60	35	47.9	1.3	78	12+	16	24	0	10	36	68	.32	-1.32	.32	2	0	T	0	----	---	--	---	--	15	7	9	4.4	--
MISSISSIPPI																																
Jackson	305	1003.7	1015.8	78	56	66.7	.3	89	2	35	21	0	0	58	77	2.39	.21	1.23	6	3	.0	0	3.5	SE	23	N	20	12	8	11	5.5	55
Meridian	292	1002.1	1016.0	79	53	65.7	1.0	89	2	33	21	0	0	58	84	5.89	3.51	3.54	6	2	.0	0	4.0	NNE	*17	NNW	20+	12	10	9	4.9	--
Vicksburg (U)	234	1006.5	------	76	59	67.3	-.4	87	2	37	21	0	0	--	--	4.94	2.72	2.94	9	2	.0	0	6.9	---	26	SE	19+	11	7	13	5.5	57
MISSOURI																																
Columbia	778	986.5	1014.8	70	48	59.1	1.0	87	11	25	20	0	1	47	69	4.38	1.17	1.43	11	5	.0	0	9.8	SE	29	W	31	12	7	12	5.0	57
Kansas City	741	980.0	1015.1	72	51	61.6	2.0	88	11+	30	20	0	1	47	60	5.91	2.98	2.80	10	7	.0	0	7.3	ENE	34	S	25	13	7	11	5.0	68
St. Joseph	809	980.4	------	69	46	57.6	-.5	87	11	24	20	0	2	--	--	1.49	-1.04	.76	6	5	.0	0	8.3	N	*32	NW	31	16	6	9	4.4	--
St. Louis (RFC)	465	------	------	68	52	59.9	-.7	83	12	31	20	0	1	--	--	3.32	.42	1.00	11	--	.0	0	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

		Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
State and station	Elevation (ground)	Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In.	In	In			In.	In	M p h		M p. h.			0–3	4–7	8–10	0–10	%
MISSOURI (Cont'd.)																																
St. Louis	552	995.3	1016.0	68	50	59.0	-0.4	82	12	29	20	0	1	49	72	3.36	0.28	1.10	11	2	0.0	0	6.7	SE	33	W	1+	12	8	11	5.6	56
Springfield	1265	967.8	1015.5	73	48	60.4	2.0	90	1	24	20	1	3	50	75	2.92	-.48	1.01	11	4	.0	0	10.7	SSE	39	W	1	8	[illegible]	6	6.2	74
MONTANA																																
Billings	3567	891.0	1015.3	63	40	51.5	2.3	85	6	24	30	0	4	28	45	.81	[illegible]	.73	5	0	T	0	12.0	SW	49	NW	24	9	13	9	5.2	64
Butte	5530	830.7	1019.3	55	26	40.4	-.6	76	6	3	30	0	29	25	58	.18	-.61	.09	6	1	5.3	2	8.6	NW	*33	WNW	28	10	7	14	6.0	--
Glasgow	2277	939.7	1014.5	60	36	48.0	2.5	83	4	13	19	0	10	27	49	.34	-.46	.26	4	0	8	T	----	--	--	---	--	9	10	12	5.8	--
Great Falls	3664	888.3	1015.1	61	40	50.2	2.1	83	6	23	19	0	4	25	41	.04	-.68	.03	2	1	T	0	13.7	SW	43	SW	30	4	17	10	5.9	70
Havre (U)	2488	925.5	1014.6	63	37	49.8	3.0	87	6	17	30+	0	7	--	--	.52	-.16	.41	3	0	.7	T	9.2	SSW	43	SW	4	5	14	12	6.1	62
Helena	3893	874.4	1017.7	61	32	46.4	1.3	84	6	12	30	0	14	28	53	.26	-.42	.17	4	1	4.1	T	8.9	W	40	SW	24	5	12	14	6.6	55
Kalispell	2965	------	------	57	30	43.4	-1.0	79	4	21	30	0	23	--	--	1.00	-.36	.50	11	0	.5	T	----	--	--	---	--	6	11	14	6.5	--
Miles City	2629	931.3	1015.7	65	38	51.4	3.1	88	6+	20	19	0	7	29	47	.22	-.72	.15	6	0	T	0	9.5	SSE	*44	NW	29	8	14	9	5.1	--
Missoula	3200	903.8	1020.0	58	30	43.6	-1.3	79	4	17	30	0	21	32	67	.67	-.40	.39	8	0	2	T	5.9	NW	37	W	6	2	13	16	7.1	45
NEBRASKA																																
Grand Island	1841	949.2	1015.5	69	41	54.7	.7	86	11+	24	19	0	5	40	64	.65	-.66	.39	4	3	[illegible]	T	9.3	S	-	--	--	17	9	5	3	--
Lincoln (U)	1166	------	------	69	45	56.9	.5	86	11	24	20	0	2	-	-	1.49	[illegible]	1.13	4	2	0	0	8.4	SSE	30	NW	31	15	8	8	4.2	73
Norfolk	1544	959.0	1015.0	67	38	52.8	.7	86	11	16	20	0	6	38	58	.62	-.74	.35	2	3	0	0	----	---	--	---	--	15	10	6	4.0	--
North Platte	2779	915.7	1014.8	70	35	52.3	.6	86	4	19	31	0	9	35	56	.26	-.78	.18	5	4	T	0	10.8	NNW	42	N	29	13	11	7	4.2	73
Omaha	978	975.3	1015.8	68	45	56.2	.7	85	11	22	20	0	2	[illegible]	66	1.05	-.68	.91	4	3	0	0	9.8	SSE	35	NW	31+	16	6	9	4.1	73
Omaha N.Omaha AP	1323	967.5	------	66	44	54.8	1.1	83	11	21	20	0	2	--	--	1.30	-.43	1.20	4	2	0	0	----	---	--	---	--	14	8	9	4.4	--
Scottsbluff	3950	879.4	1015.8	67	35	50.6	.1	85	8+	23	31	0	10	32	54	.63	-.38	.41	6	0	6	T	10.8	WNW	*38	NNW	29+	13	9	9	4.6	--
Valentine	2587	922.8	------	69	34	51.4	1.9	88	7	14	19	0	14	--	54	.23	-.94	.17	2	1	.0	0	9.9	S	38	N	30	14	11	6	3.8	79
NEVADA																																
Elko	5075	845.9	1018.2	65	28	46.2	-1.2	80	6+	14	30	0	24	23	42	.45	-.36	.41	2	0	T	0	5.1	NNE	*23	WNW	26	17	5	9	4.3	--
Ely	6257	810.0	1016.3	62	30	46.3	-.6	83	1	14	30	0	21	23	44	.37	-.45	.26	3	0	3.9	3	11.4	S	43	N	15	14	9	8	4.1	81
Las Vegas	2162	947.5	1012.7	79	53	66.1	-1.3	94	6	40	31	4	0	33	33	.49	.17	.49	2	0	.0	0	9.0	WSW	*37	NNW	15	19	9	3	2.7	82
Reno	4397	863.2	1018.0	70	28	48.9	-1.8	84	1	16	27	0	21	30	52	.18	-.37	.14	2	0	4	T	4.4	S	34	S	6	14	11	6	4.0	91
Winnemucca	4299	869.6	1018.3	68	28	48.1	-.5	84	3+	12	27	0	21	24	43	.34	-.45	.34	1	1	T	T	6.3	NNE	54	NE	9	14	9	8	4.5	70
NEW HAMPSHIRE																																
Concord	339	1004.4	1015.2	60	33	46.8	-1.2	75	15+	18	22	0	17	36	70	2.09	-.71	.90	7	2	T	0	6.4	NW	29	NW	12	11	8	12	5.7	59
Mr.Washington Obs.	6262	802.7	------	33	22	27.4	-4.3	45	15	8	21	0	29	--	84	6.12	.22	2.97	13	0	20.3	10	41.8	W	‡91	NW	9	6	7	18	6.9	45
NEW JERSEY																																
Atlantic City (U)	39	------	------	65	50	57.7	-.3	79	11	34	26	0	0	--	--	2.51	-.70	1.21	8	--	.0	0	11.1	---	35	WNW	24	--	--	--	----	--
Atlantic City	58	1013.7	1016.3	67	46	56.5	-.1	84	15	31	26	0	1	46	73	3.08	.03	1.32	8	0	T	0	12.6	NNW	41	WNW	24	12	5	14	5.8	59
Newark	11	1014.7	1016.1	67	48	57.3	1.7	85	15	37	26	0	0	44	63	2.79	-.41	2.02	9	1	T	0	9.2	SW	*28	WNW	25	9	11	11	5.9	--
Trenton (U)	36	1008.5	------	65	47	56.0	-.1	80	15+	36	26	0	0	--	--	2.25	-.40	1.11	9	2	T	T	8.2	---	30	W	24	11	11	9	5.4	65
NEW MEXICO																																
Albuquerque	5310	849.0	1013.9	68	45	56.5	-1.7	81	8+	36	31+	0	0	35	51	2.88	2.24	1.31	6	4	.0	0	6.5	N	46	SE	15	20	5	6	3.0	75
Clayton	4969	845.6	1013.9	68	40	53.8	-1.3	81	5	26	30	0	4	--	--	2.97	1.67	1.48	7	3	2.6	T	----	---	--	---	--	20	2	9	3.5	--
Raton	6379	806.3	1014.6	66	34	50.0	-1.1	80	8	20	31	0	10	--	--	3.00	1.90	1.30	7	1	3.1	3	----	---	--	---	--	18	7	6	3.5	--
Roswell	3612	892.7	1013.2	77	42	59.8	-1.1	92	8	25	31	3	1	40	56	3.53	2.55	3.17	4	2	.0	0	7.4	---	28	N	15	21	3	7	3.0	--
Silver City	5453	834.1	1012.8	72	44	57.7	---	85	8	32	31	0	1	--	--	1.73	----	.72	8	6	0	0	----	---	--	---	--	19	7	5	3.0	--
NEW YORK																																
Albany	277	1011.6	1015.4	61	38	49.4	-1.3	76	15	27	22	0	3	40	73	1.58	-.63	.86	7	1	T	0	8.4	WNW	37	W	25	8	10	13	6.5	61
Binghamton	1590	956.1	1015.7	57	40	48.6	.3	77	15	31	25+	0	3	40	75	1.78	-1.26	.96	9	0	.8	1	8.6	WNW	40	W	25	4	12	15	6.7	62
Buffalo	693	987.9	1016.3	61	41	50.6	-.6	78	14	29	26	0	3	40	70	1.89	-.60	.55	11	1	1.0	T	9.3	WNW	30	SW	2	6	11	14	6.2	66
New York (U)	10	1014.1	------	64	50	57.0	.0	78	11	37	25+	0	0	--	67	2.28	-.76	1.25	9	1	.0	0	12.1	---	44	W	24	9	11	11	5.4	61
New York(Laguardia)	19	1014.0	1015.9	66	51	58.5	.9	82	15	37	24	0	0	44	63	2.43	-.48	1.04	9	1	T	0	13.7	WNW	43	NW	24	7	12	12	6.1	--
Rochester	543	996.6	1016.1	61	40	50.2	-.6	80	14	29	26	0	4	41	74	1.72	-.78	.38	9	0	1.4	T	9.8	WSW	34	W	25	7	11	13	6.1	62
Schenectady	217	------	------	60	41	50.7	.4	74	15	31	22	0	1	--	--	1.43	-1.23	.94	7	1	T	0	----	---	--	---	--	19	4	8	4.1	--
Syracuse	424	993.4	1015.9	60	40	50.0	-2.4	80	14	32	24	0	1	40	70	2.77	-.27	1.09	9	0	2.0	1	10.5	WNW	40	S	5	7	10	14	6.3	51
NORTH CAROLINA																																
Asheville (U)	2203	937.6	------	69	48	58.9	1.9	80	12+	33	25+	0	0	--	--	4.26	1.72	.84	12	4	.0	0	5.8	---	33	NW	24	8	10	13	6.0	44
Cape Hatteras (R)	7	1014.8	1015.6	72	58	64.9	-1.4	83	14	36	26	0	0	58	80	3.17	-.88	1.94	11	5	.0	0	9.2	NNE	30	WSW	24	8	8	15	6.3	54
Charlotte	725	988.4	1016.6	75	53	63.7	2.2	88	3	34	25	0	0	54	78	3.74	.75	1.20	11	2	0	0	8.0	NE	47	NW	3	11	8	12	5.5	62
Greensboro	891	985.4	1017.6	70	49	59.6	.6	84	3	31	25	0	1	51	79	4.04	1.14	.72	13	3	.0	0	5.7	ENE	43	N	3	10	7	14	5.8	65
Raleigh	433	1003.0	1016.9	72	49	60.5	-.6	85	3	30	25	0	2	52	78	2.29	-.53	1.13	7	3	.0	0	6.3	NE	*35	NNE	3	12	8	11	5.2	55
Wilmington	30	1013.1	1015.9	76	55	65.4	[illegible]	86	3	[illegible]	25	0	0	58	84	2.03	-.75	.96	10	3	.0	0	6.8	N	33	N	3	12	10	9	4.9	71
Winston-Salem	967	981.5	1016.9	70	51	60.6	.8	81	[illegible]	[illegible]	21	0	0	51	75	2.31	-.82	.56	11	3	.0	0	6.9	NE	*25	NW	24+	9	10	12	[illegible]	--
NORTH DAKOTA																																
Bismarck	1650	954.3	1015.3	62	32	47.0	1.3	91	4	5	19	1	16	27	50	.10	-.90	.10	2	0	T	0	10.4	WNW	37	W	27	13	6	12	5.3	68
Devils Lake (U)	1471	960.0	------	57	33	45.2	1.3	84	4	17	19	0	15	--	61	.60	-.66	.45	5	1	T	T	8.5	NNW	27	NW	16	11	9	11	5.2	70
Fargo	895	980.0	1014.9	60	35	47.5	1.4	83	9+	21	23+	0	12	35	66	1.34	.08	1.20	5	1	T	T	15.8	SSE	57	NW	5	13	10	8	4.5	57
Williston (U)	1877	946.5	1014.9	61	35	47.6	2.1	82	6	7	19	0	11	31	53	.02	-.75	.02	1	0	0	0	6.3	NNW	33	W	27	8	11	12	5.9	61
OHIO																																
Akron	1210	978.6	1017.1	64	42	52.8	-.2	79	13	30	26	0	3	42	[illegible]	1.02	-1.37	.36	6	1	T	0	9.5	NW	[illegible]	---	-	10	9	12	[illegible]	--
Cincinnati Obs.	761	------	------	68	47	57.5	.1	83	12	29	25	0	2	--	--	2.94	.75	.67	10	3	.0	0	4.5	---	19	S	5	--	--	-	----	54
Cincinnati	869	984.6	1016.8	68	47	57.1	1.1	83	12	25	25	0	2	46	70	4.00	1.83	1.22	10	3	0	0	6.8	SSW	*40	WNW	15	8	9	14	6.3	--
Cleveland	787	988.2	1016.6	62	40	51.0	-3.4	79	13	29	26-	0	5	43	75	1.02	-1.40	.28	9	1	T	0	9.5	S	30	NW	23	7	11	13	6.2	58
Columbus (U)	724	------	------	66	47	56.7	.6	[illegible]	13	30	25	0	1	--	--	2.12	.12	.64	7	3	0	0	---	---	-	---	--	--	--	--	----	--
Columbus	815	986.6	1017.0	67	43	55.1	.6	82	13	23	25	0	3	45	73	2.55	.37	.90	7	3	0	0	5.8	NNW	[illegible]	NW	24	10	10	11	[illegible]	[illegible]
Dayton	1002	980.1	1016.7	66	45	55.6	.5	82	12	26	[illegible]	0	2	43	68	1.86	-.44	.50	8	3	.0	0	7.5	N	37	W	[illegible]	9	[illegible]	13	5.8	65
Mansfield	1296	------	------	63	43	52.8	----	79	[illegible]	24	[illegible]	0	3	--	--	1.72	----	.56	11	1	.0	[illegible]	----	---	--	---	--	8	10	13	5.9	-
Sandusky (U)	603	994.5	------	63	46	54.4	-.6	81	14	27	[illegible]	0	1	--	--	1.00	-1.10	.34	7	1	T	[illegible]	7.4	---	50	NW	23	13	10	8	[illegible]	66
Toledo	676	991.0	1016.8	64	41	52.2	-.5	82	13	[illegible]	25	0	5	42	74	.99	-1.33	.34	6	2	[illegible]	[illegible]	7.6	WNW	[illegible]	NW	[illegible]	9	11	11	[illegible]	75
Youngstown	1178	973.8	1016.8	62	40	51.1	-2.8	79	14	27	[illegible]	0	3	40	70	1.43	-1.34	.43	8	1	[illegible]	[illegible]	8.0	SE	*25	NW	24	7	10	14	6.4	--
OKLAHOMA																																
Oklahoma City	1280	971.6	1014.9	75	53	64.4	1.2	88	[illegible]	33	20	0	0	54	73	4.66	2.00	2.61	9	6	.0	0	11.8	SSE	45	SW	13	13	7	11	4.7	66
Tulsa	672	990.2	1014.6	78	54	65.6	2.2	90	1	32	20	1	1	53	68	3.53	.44	1.96	7	3	.0	0	[illegible]	SSE	29	W	29+	14	5	12	[illegible]	57
OREGON																																
Astoria	8	1016.3	1017.0	61	46	53.5	-.6	75	16	34	9	0	0	50	86	7.33	.18	1.86	18	1	.0	0	8.8	SSE	*37	WNW	7	2	6	23	8.1	--
Burns (U)	4140	874.7	1018.7	64	31	47.3	.1	81	1	17	30	0	19	29	53	.20	-.60	.13	4	0	T	T	----	---	--	---	--	13	5	13	5.4	--
Eugene	361	1004.4	1018.1	65	42	53.4	.7	81	1	32	10	0	1	-	--	1.65	-1.92	.45	10	0	0	0	7.2	--	*26	SSW	6	7	5	19	6.9	--
Meacham	4050	------	------	55	37	45.6	.1	78	3	26	9	0	8	--	--	3.21	.27	.82	12	1	2.0	T	----	---	--	---	--	8	8	[illegible]	6.4	--
Medford	1312	970.5	1018.5	70	39	54.7	.2	90	1	29	13	[illegible]	5	41	68	.38	-1.53	.20	5	1	0	0	3.6	S	*21	SSE	5+	7	13	11	5.7	-
Pendleton	1492	963.8	1017.6	65	43	53.8	.2	86	5	30	30	0	1	39	62	1.22	.04	.60	7	1	.0	0	8.3	SE	*30	WSW	7	11	8	12	5.5	--
Portland	21	1011.5	1017.3	64	45	54.5	-.2	78	17+	33	14	0	0	49	82	2.39	-.78	.56	14	0	.0	0	5.6	ESE	[illegible]	S	11	3	6	22	7.8	41
Roseburg	505	999.3	1018.0	67	42	54.4	.1	87	1	32	10	0	1	--	--	1.53	-1.40	.69	11	0	.0	0	3.6	N	26	SW	23	3	10	18	7.4	43
Salem	195	1010.5	1018.1	66	44	54.8	.3	81	1	34	9	0	0	47	79	2.75	-.95	.98	14	1	.0	0	5.8	S	*22	SSW	27	6	8	17	6.9	--
Sexton Summit(R)	3836	884.9	1016.9	59	44	51.4	1.1	77	1	29	9	0	3	--	--	2.13	-1.71	.77	10	0	.0	0	11.3	S	--	---	--	1	7	13	5.6	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

OCTOBER 1960

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
PACIFIC AREA																																
Canton Island	8	1009.5	1009.9	90	79	84.2	0.1	94	25	75	30	19	0	72	71	0.61	0.22	0.37	6	0	0.0	0	12.9	ENE	*23	E	30	0	0	31	10.0	--
Eniwetok	13	1008.8	1009.5	87	80	83.9	----	90	16+	75	20	2	0	76	77	6.87	----	1.72	16	2	.0	0	----	---	--	---	--	--	--	--	----	--
Guam (R)	361	------	------	86	72	79.0	.1	89	6	69	13	0	0	--	--	11.78	-1.12	2.14	25	10	.0	0	5.1	⊕SE	23	E	31	--	--	--	----	33
Johnston Is.	7	1012.2	1014.8	85	77	81.0	----	88	7	70	30	0	0	73	77	6.98	----	2.37	15	0	.0	0	11.6	---	32	E	29	5	16	10	6.2	74
Koror (R)	94	1006.1	1009.9	88	76	82.2	1.1	92	15	72	20+	9	0	77	85	15.04	2.50	2.64	20	9	.0	0	7.8	SW	25	SW	4	0	1	30	9.7	38
Kwajalein	8	1009.8	1010.7	87	77	82.0	----	90	8	72	15	1	0	76	81	9.00	----	1.68	24	2	.0	0	7.9	ENE	23	SSE	20+	0	11	20	8.1	--
Majuro	10	1010.2	1010.5	87	78	82.3	----	88	25+	75	17	0	0	75	79	9.71	----	1.43	26	2	.0	0	6.4	E	26	E	27	0	9	22	8.5	--
Ponape (R)	123	1004.7	1010.0	87	73	80.2	-.5	90	17+	71	24+	4	0	75	87	16.18	-.21	3.13	22	4	.0	0	2.8	S	19	SW	28	0	3	28	9.4	48
Truk, Moen Island	8	1009.8	1010.1	88	75	81.5	.8	92	23	73	29	4	0	76	82	11.14	.11	4.38	22	3	.0	0	4.7	S	27	N	12	1	1	29	9.0	60
Wake Island	11	1012.9	1013.3	87	76	81.2	-.2	89	1	69	15	0	0	74	78	6.70	.66	3.11	17	4	.0	0	14.3	ENE	*26	NE	31	5	15	11	6.5	--
Yap (R)	55	1007.1	1009.1	86	75	80.3	-1.6	90	26+	71	15	3	0	77	88	18.07	5.25	2.36	25	8	.0	0	3.8	W	23	W	2	0	1	30	9.8	22
PENNSYLVANIA																																
Allentown	376	1002.3	1016.7	65	41	53.0	-.2	81	15	29	26	0	2	43	74	1.08	-1.89	.77	8	2	T	0	7.9	W	*30	WSW	24	8	13	10	5.5	--
Erie	732	------	1016.3	60	44	52.1	-.2	77	14	34	24	0	0	41	69	2.21	-.80	.66	11	3	T	T	11.8	SSE	*35	WNW	23	7	10	14	6.3	--
Harrisburg	335	1002.8	1016.6	65	45	55.1	-.1	81	15+	32	26	0	1	43	69	1.34	-1.73	.88	5	1	T	0	5.3	W	27	NW	25+	6	9	16	6.4	52
Philadelphia (U)	35	------	------	67	51	59.1	.6	82	15+	37	24	0	0	--	--	----	----	----	--	--	---	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1011.4	1016.0	65	44	54.8	-1.8	80	11	29	26	0	2	45	72	2.79	.19	1.50	10	1	.0	0	8.2	WSW	29	NW	25	9	10	12	5.5	58
Pittsburgh (U)	749	------	------	65	47	55.8	-.1	80	15+	32	26	0	1	--	--	2.07	-.42	.72	10	--	T	0	----	---	--	---	--	--	--	--	----	47
Pittsburgh	1151	986.5	1017.3	64	44	53.5	.5	80	14	30	26	0	2	41	66	1.64	-.80	.58	10	0	.1	T	7.0	WNW	*22	NW	24+	6	10	15	6.5	68
Reading (U)	266	1004.3	-----	66	46	56.0	-.1	83	15	32	24	0	1	--	--	1.33	-1.42	.78	10	0	T	T	8.9	---	45	W	24	11	10	10	5.2	68
Scranton	940	982.1	1016.8	61	40	50.5	-1.7	78	15	30	22	0	4	38	68	1.22	-2.16	.62	7	0	.4	T	8.0	ENE	24	NW	24+	7	12	12	5.9	57
Williamsport	527	997.8	1017.1	63	40	51.2	-1.8	77	15	29	26	0	2	42	76	1.78	-1.59	.73	8	1	T	T	6.0	W	*22	WNW	24	5	14	12	6.5	--
RHODE ISLAND																																
Block Island	110	1010.0	------	61	48	54.7	.2	69	11	35	22	0	0	--	--	2.65	-.45	1.20	8	1	.0	0	----	---	--	---	--	14	5	12	5.0	--
Providence	55	1009.1	1015.2	63	42	52.6	-.1	81	15	28	22	0	3	42	71	2.24	-.59	1.28	8	1	T	0	11.0	N	*29	NNE	29	10	10	11	5.5	61
SOUTH CAROLINA																																
Charleston (U)	9	------	------	77	64	70.2	2.0	86	9	49	22	0	0	--	--	1.46	-.98	.98	8	--	.0	0	8.4	---	29	N	3	--	--	--	----	--
Charleston	41	1014.4	1016.5	79	57	67.8	1.3	87	1	36	26	0	0	59	78	.98	-1.75	.45	9	3	.0	0	6.6	NNE	27	NW	3	12	11	8	5.0	64
Columbia	217	1003.0	1015.9	79	54	66.5	1.6	90	3	35	26+	1	0	56	78	1.71	-.71	.75	7	2	.0	0	4.3	NE	27	N	3	15	9	7	4.5	65
Florence	146	1009.9	1015.6	77	55	65.7	1.6	86	6+	37	26	0	0	56	78	3.69	1.42	2.30	8	4	.0	0	6.6	N	*21	NNW	3	14	8	9	4.5	--
Greenville	1018	979.4	1016.6	75	54	64.6	2.1	87	3	37	25	0	0	54	76	4.74	1.28	1.66	12	4	.0	0	6.4	NE	31	NW	4	10	12	9	4.9	69
Spartanburg	801	986.5	1016.5	73	53	63.3	1.1	87	3	38	25	0	0	53	75	5.94	2.54	1.48	12	4	.0	0	7.5	NNE	*25	WNW	4	12	9	10	5.0	--
SOUTH DAKOTA																																
Huron	1282	967.5	1015.3	64	34	48.5	-1.5	83	11	11	19	0	15	37	68	.76	-.50	.47	2	1	.0	0	11.9	SSE	38	NW	30	18	6	7	3.7	77
Rapid City	3165	901.1	1015.5	67	37	51.8	2.7	88	4	16	19	0	10	26	41	T	-1.13	T	0	0	T	0	12.0	NNW	45	NW	27	18	5	8	4.0	76
Sioux Falls	1420	963.4	1015.3	64	38	50.7	.7	83	11	19	19	0	7	36	59	.67	-.79	.66	2	1	T	T	8.7	SE	*33	WNW	22	16	7	8	4.2	--
TENNESSEE																																
Bristol	1519	962.9	1017.3	70	49	59.4	1.5	82	2	30	25+	0	3	50	76	4.42	2.03	1.19	11	5	.0	0	4.6	NE	*29	W	3	8	6	17	6.5	--
Chattanooga	670	988.7	1016.5	72	50	61.2	.4	84	3+	35	25+	0	0	53	82	3.77	.53	1.37	11	5	.0	0	4.4	NNE	28	S	19	10	8	13	5.8	57
Knoxville	950	981.5	1016.8	72	52	61.8	1.5	82	3	33	25	0	0	54	79	4.34	1.71	1.64	11	5	.0	0	5.7	NE	33	N	3	5	10	16	6.7	38
Memphis (U)	271	------	------	73	57	65.0	.0	85	3+	37	20	0	0	--	--	4.83	1.65	1.01	10	--	.0	0	----	---	--	---	--	--	--	--	----	--
Memphis	263	1000.9	1015.8	74	54	63.8	.2	86	3+	35	21	0	0	55	76	4.11	.84	1.22	9	6	.0	0	6.4	E	26	SW	30	10	9	12	5.8	57
Nashville	577	995.9	1016.0	73	51	61.6	-.2	86	2	33	22+	0	0	53	78	1.38	-1.14	.45	9	4	.0	0	5.1	S	25	SW	31	9	8	14	6.3	55
Oak Ridge	905	983.6	------	71	51	60.6	1.8	84	2	33	25	0	0	--	--	4.55	2.13	1.45	12	6	.0	0	2.5	---	‡27	---	19	11	7	13	5.6	--
TEXAS																																
Abilene	1759	952.9	1013.4	80	57	68.2	2.0	90	9	37	31	1	0	55	69	3.99	1.42	1.84	8	6	.0	0	9.0	SSE	33	N	30	16	6	9	4.4	63
Amarillo	3590	888.6	1013.6	71	46	58.6	-.1	84	2	29	31	0	1	45	66	4.82	2.89	2.40	9	7	.0	0	12.4	SW	43	NW	30+	18	5	8	3.7	76
Austin	615	992.2	1014.1	81	62	71.5	.6	90	9+	43	31	3	0	63	78	12.31	9.36	7.22	11	7	.0	0	8.0	SSE	30	N	30	5	15	11	6.1	57
Brownsville	16	1010.5	1013.0	87	70	78.5	2.5	93	5	53	31	10	0	70	79	3.67	.76	2.05	8	5	.0	0	10.0	SE	47	NE	6	7	16	8	5.5	56
Corpus Christi	41	1012.5	1013.8	84	67	75.8	1.3	96	5	51	31	5	0	68	78	10.66	8.20	7.25	13	7	.0	0	9.7	ESE	42	NE	16	4	15	12	6.4	54
Dallas	487	996.3	1014.8	80	60	69.9	1.1	91	6	38	20	1	0	58	71	3.74	1.07	2.84	3	1	.0	0	9.8	S	61	NW	13	14	7	10	5.0	59
Del Rio (U)	957	------	------	84	65	74.2	2.7	99	5	41	31	7	0	--	--	3.20	1.00	2.04	12	7	.0	0	----	---	--	---	--	--	--	--	----	--
El Paso	3920	885.9	1012.8	77	50	63.5	-1.7	88	8+	34	31	0	0	39	44	.77	-.06	.73	3	1	.0	0	9.8	N	34	W	9	20	7	4	2.6	84
Fort Worth	544	993.9	1014.7	80	60	70.0	1.5	91	6	40	20	3	0	59	73	1.82	-.87	1.47	4	1	.0	0	11.1	S	*43	ENE	13	14	6	11	4.9	--
Galveston (U)	7	------	------	79	69	74.0	.4	84	9+	50	31	0	0	--	--	6.47	2.88	2.03	11	--	.0	0	10.7	---	40	NW	29	--	--	--	----	58
Galveston	5	1012.5	1014.8	80	69	74.2	.4	85	9+	51	31	0	0	65	74	7.97	4.13	3.05	9	8	.0	0	9.1	SE	--	---	--	7	12	12	6.2	--
Houston (U)	41	1009.5	------	82	65	73.4	.8	91	9	47	31	1	0	--	--	10.85	7.46	2.90	12	6	.0	0	8.4	⊕SE	42	N	6	4	14	13	6.3	52
Houston	50	1012.2	1014.9	83	64	73.2	1.8	90	9+	48	31	3	0	66	84	7.32	3.62	1.73	14	9	.0	0	7.2	ESE	--	---	--	5	9	17	6.8	--
Laredo	500	997.3	1012.6	89	69	79.0	2.5	99	6+	46	31	19	0	64	66	1.51	-.06	.68	7	4	.0	0	11.4	SE	*33	ESE	17+	6	13	12	6.0	--
Lubbock	3243	903.2	1013.9	76	49	62.1	.9	91	9	30	31	1	1	48	66	5.83	3.76	3.90	6	5	.0	0	12.4	WSW	*35	N	30	16	7	8	4.0	--
Midland	2854	914.3	1012.4	79	55	66.9	.3	91	9+	35	31	3	0	49	60	2.29	.51	1.76	5	3	.0	0	10.0	SE	*29	NNE	15	14	7	10	4.5	--
Port Arthur	16	1013.5	1014.7	81	63	71.7	1.2	87	12+	46	31	0	0	65	82	6.16	3.23	2.00	9	5	.0	0	9.4	ENE	41	W	5	5	13	13	6.6	48
San Angelo	1903	946.5	1012.8	84	58	71.2	3.2	98	5	35	31	13	0	56	65	3.70	1.45	2.73	7	4	.0	0	11.7	SSW	*60	WNW	28	13	10	8	4.9	--
San Antonio	792	989.2	1013.9	83	64	73.3	2.0	94	5	44	31	7	0	63	76	7.84	5.74	2.91	14	6	.0	0	9.0	SE	34	N	29	5	9	17	6.7	52
Victoria	110	1008.8	1013.7	83	64	73.3	-.3	93	5	46	31	6	0	66	79	17.25	14.37	8.67	14	9	.0	0	8.9	SE	÷52	NNW	18	6	11	14	6.4	--
Waco	500	993.6	1014.6	81	61	71.1	1.7	92	5	43	31	6	0	62	76	5.25	2.84	2.86	8	7	.0	0	11.8	S	*52	NNW	13	10	7	14	5.8	--
Wichita Falls	1020	977.0	1013.7	79	56	67.4	2.1	90	1	36	20	1	0	57	73	6.03	3.25	2.13	6	6	.0	0	10.0	S	*46	WNW	18	12	10	9	4.6	--
UTAH																																
Milford	5028	844.9	1016.3	66	35	50.5	.4	82	6	19	31	0	10	--	--	.94	.06	.93	2	1	T	T	----	---	--	---	--	17	6	8	3.9	--
Salt Lake City	4220	868.9	1017.4	65	38	51.6	-1.3	83	7+	18	30	0	9	33	54	1.19	-.15	.66	5	2	T	0	9.5	SE	29	NW	26	17	5	9	4.3	76
Wendover	4237	872.0	1015.6	65	43	53.8	----	83	6	27	30	0	2	--	--	.27	----	.22	2	2	.0	0	----	---	--	---	--	18	6	7	3.6	--
VERMONT																																
Burlington	331	1000.3	1015.2	56	35	45.4	-2.8	65	17	24	22+	0	13	38	78	4.04	1.15	1.61	13	0	T	0	6.5	SSW	27	N	25	6	7	18	6.7	59
VIRGINIA																																
Lynchburg	947	983.0	------	68	49	58.3	.5	83	12	31	26	0	2	--	--	2.26	-.61	1.24	9	1	.0	0	6.5	---	27	N	16	11	6	14	5.8	55
Norfolk	26	1014.4	1016.9	70	53	61.8	.6	84	6	37	26	0	0	52	73	2.76	.31	1.00	7	2	.0	0	10.3	NNE	34	W	24	11	7	13	5.8	60
Richmond	162	1011.1	1017.4	68	46	57.1	-1.7	82	14	30	26	0	2	49	81	3.31	.70	1.36	8	1	.0	0	6.6	NNW	22	NW	24	11	4	16	6.0	53
Roanoke	1174	974.8	1017.2	70	48	58.8	.9	83	14+	30	26+	0	3	47	71	3.26	.23	1.56	8	2	.0	0	5.6	SE	--	---	--	11	7	13	6.2	--
WASHINGTON																																
Olympia	190	1009.8	1017.1	61	41	51.1	.1	72	1	30	10+	0	5	46	85	5.84	1.34	1.70	14	1	.0	0	6.8	SW	*26	SW	27+	1	7	23	8.3	--
Seattle (U)	14	------	------	60	50	55.2	.8	70	17	41	9	0	0	--	--	4.10	1.02	1.29	13	--	.0	0	----	---	40	SW	7	--	--	--	----	46
Seattle	14	1015.6	1016.7	--	--	----	---	--	--	--	--	--	--	48	79	----	----	----	--	--	---	--	7.2	SE	--	---	--	--	--	--	----	--
Seattle-Tacoma	386	1003.4	1017.4	59	46	52.7	1.0	68	6+	35	29+	0	0	47	82	4.22	.90	1.24	14	0	.0	0	9.5	S	*33	S	6	2	8	21	7.9	--
Spokane	2357	947.5	1017.4	60	37	48.6	.0	78	5+	26	30+	0	8	35	45	.95	-.38	.24	8	1	.0	0	8.2	SSW	32	SW	31	8	7	16	6.3	55
Stampede Pass (R)	3958	879.8	1018.7	50	38	43.6	1.2	65	5+	27	29	0	12	--	--	10.44	1.10	1.48	17	0	31.4	8	----	---	--	---	--	5	5	21	7.7	--
Tatoosh Island(R)	101	1012.2	1015.2	56	48	52.2	.3	65	6	44	30+	0	0	49	87	9.70	.98	2.05	18	1	.0	0	17.3	ENE	52	S	6	3	6	22	8.2	33
Walla Walla (U)	949	980.7	1016.6	65	46	55.7	.5	84	3	35	30	0	0	--	--	1.51	.03	.72	7	0	.0	0	4.5	⊕ S	24	W	28+	10	8	13	5.7	59
Yakima	1061	978.0	1017.4	66	36	50.9	.3	82	5	24	29	0	9	37	62	.16	-.46	.10	3	0	.0	0	7.1	WNW	*37	SW	31	8	7	16	6.4	--
WEST INDIES																																
San Juan, P.R.(U)	47	------	------	86	75	80.7	.6	92	17	72	23	3	0	--	--	4.21	-1.06	1.66	14	10	.0	0	----	---	--	---	--	--	--	--	----	--
San Juan, P.R.	15	1011.4	1014.1	88	73	80.6	.9	91	21+	70	24+	9	0	73	80	4.63	-1.90	1.96	10	9	.0	0	8.5	SSE	24	E	3	0	19	12	6.8	67

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb.	°F	°F.	°F	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M p. h.		M p. h.			0–3	4–7	8–10	0–10	%
WEST INDIES (Cont'd.)																																
Swan Island	33	1009.4	------	88	78	83.3	1.6	91	9	71	22	6	0	--	--	4.02	-5.23	1.01	15	10	0.0	0	----	---	--	---	--	2	19	10	6.4	--
WEST VIRGINIA																																
Charleston	950	981.2	1016.8	69	48	58.1	.7	83	13	27	25	0	4	50	78	2.21	-.60	.96	11	2	.0	0	4.1	ESE	*20	SW	2	3	14	14	7.2	-
Huntington (U)	567	------	------	70	48	58.7	-.5	84	15	29	25	0	4	--	--	1.77	-.66	.86	10	--	.0	0	----	---	--	---	--	--	--	--	----	--
Parkersburg (U)	615	------	------	69	45	56.9	.0	84	13	24	25	0	4	--	--	1.66	-.46	.56	10	1	.0	0	4.8	---	23	NW	24+	7	12	12	6.0	51
WISCONSIN																																
Green Bay	689	992.6	1015.6	59	36	47.2	-1.2	78	10	18	25	0	8	41	81	2.32	.52	1.50	10	2	.0	0	9.8	SW	33	SW	5	10	5	16	6.0	44
La Crosse	652	990.5	1015.5	60	41	50.9	.1	80	12	22	21	0	5	41	74	3.00	1.07	1.24	7	3	.0	0	8.9	S	*32	WNW	31	9	9	13	6.0	--
Madison	857	980.0	1015.9	61	37	49.2	-1.2	79	11	20	21	0	7	41	73	3.32	1.24	2.01	7	4	.0	0	7.9	S	29	S	31	9	8	14	6.0	57
Milwaukee	672	991.2	1016.7	59	39	48.8	-2.6	76	5	21	21	0	5	44	82	3.06	1.09	1.36	10	4	.2	T	9.2	WNW	28	SW	5	13	8	10	5.1	65
WYOMING																																
Casper	5319	837.8	1015.8	61	34	47.5	1.1	79	7	20	15	0	12	24	47	.27	-.84	.17	4	1	1.6	1	12.5	WSW	*35	WSW	12	13	3	15	5.5	--
Cheyenne	6131	812.1	1015.4	62	36	48.8	2.4	79	8+	22	30+	0	10	26	48	1.11	-.02	.59	5	1	T	T	12.9	WNW	54	NW	31	10	11	10	5.2	70
Lander	5563	835.8	1016.0	60	34	47.1	2.5	80	4	12	30	0	13	31	58	1.95	.42	1.32	7	1	6.6	3	5.1	⊕SW	30	SW	8	13	10	8	4.8	70
Sheridan	3942	885.2	1012.3	62	35	48.5	1.9	84	6	23	30	0	9	31	55	.87	-.40	.62	5	1	T	T	7.1	NW	56	NW	29	14	5	12	4.9	63

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

⊕ Wind direction to 8 compass points only.

¢ City Office Data.

† Airport Data.

‡ Peak Gust.

HEATING DEGREE DAYS

(Base 65 F.)

OCTOBER 1960

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	99	99	136
Huntsville	114	114	
Mobile	36	36	28
Montgomery	61	64	69
ALASKA			
Anchorage	860	1912	1939
Annette	520	1337	1397
Barrow	1649	4658	4126
Barter Island	1487	4259	
Bethel	1109	2503	2327
Cold Bay	748	2106	2150
Cordova	752	2042	1983
Fairbanks	1190	2314	2220
Juneau	660	1802	1850
King Salmon	926	2153	2065
Kotzebue	1314	2858	2775
McGrath	1212	2493	2352
Nome	1173	2730	2745
St. Paul	852	2617	2513
Shemya	736	2202	
Yakutat	698	1912	1979
ARIZONA			
Flagstaff	613	831	956
Phoenix (U)	14	14	13
Phoenix	16	16	22
Prescott	290	294	295
Tucson	37	37	24
Winslow	295	298	294
Yuma	0	0	0
ARKANSAS			
Ft. Smith	102	102	140
Little Rock	103	103	120
Texarkana	53	53	69
CALIFORNIA			
Bakersfield	60	60	41
Bishop	245	249	308
Blue Canyon	327	410	551
Burbank	35	35	70
Eureka (U)	318	1272	1114
Fresno	96	96	86
Long Beach	33	33	
Los Angeles (U)	22	22	58
Los Angeles	57	61	196
Mt. Shasta (R)	383	496	682
Oakland	140	343	394
Point Arguello (R)	250	867	
Red Bluff	53	53	59
Sacramento (U)	52	55	92
Sacramento	27	27	120
Sandberg (R)	208	232	237
San Diego	25	25	94
San Francisco (U)	141	736	604
San Francisco	138	400	555
San Jose (U)	84	91	141
Santa Maria	195	522	460
COLORADO			
Alamosa	657	1008	1142
Colorado Springs	440	603	575
Denver	396	506	561
Grand Junction	338	359	369
Pueblo	330	377	457
CONNECTICUT			
Bridgeport	303	369	400
Hartford	438	585	499
New Haven	350	458	474
DELAWARE			
Wilmington	297	315	329
DISTRICT OF COLUMBIA			
Washington (U)	208	214	263
Washington	212	219	274
FLORIDA			
Apalachicola (U)	7	7	17
Daytona Beach	0	0	0
Fort Myers	0	0	0
Jacksonville	2	2	16
Key West	0	0	0
Lakeland (U)	0	0	0
Miami	0	0	0
Miami Beach	0	0	0
Orlando	0	0	0
Pensacola (U)	19	19	18
Tallahassee	15	15	31
Tampa	0	0	0
West Palm Beach	0	0	0
GEORGIA			
Athens	102	109	105
Atlanta	84	89	118
Augusta	76	76	59
Columbus	70	70	78
Macon	67	67	63
Rome	152	160	148
Savannah	44	44	38
Thomasville (U)	18	18	25
IDAHO			
Boise	377	507	524
Idaho Falls 46W (R)	657	967	1027
Idaho Falls 42NW (R)	691	1003	1059
IDAHO (Cont'd.)			
Lewiston	408	536	539
Pocatello	529	705	670
ILLINOIS			
Cairo (U)	143	143	189
Chicago (Midway)	301	327	440
Chicago (O'Hare)	316	405	
Moline	348	406	467
Peoria	342	397	436
Rockford	406	502	
Springfield	263	276	404
INDIANA			
Evansville	215	221	274
Ft. Wayne	367	421	501
Indianapolis	316	344	385
South Bend	371	431	500
IOWA			
Burlington	312	357	419
Des Moines	339	421	471
Dubuque	427	556	629
Sioux City	336	432	558
Waterloo	453	491	589
KANSAS			
Concordia (U)	213	241	332
Dodge City	219	253	302
Goodland	332	430	508
Topeka	216	247	338
Wichita	171	184	251
KENTUCKY			
Lexington	212	218	315
Louisville	240	250	283
LOUISIANA			
Alexandria	51	51	
Baton Rouge	43	43	27
Lake Charles	29	29	22
New Orleans (U)	17	17	5
New Orleans	30	30	7
Shreveport	43	43	53
MAINE			
Caribou	711	1170	1282
Greenville (U)	723	1179	
Portland	575	841	785
MARYLAND			
Baltimore (U)	188	192	236
Baltimore	266	284	328
Frederick	352	392	323
MASSACHUSETTS			
Blue Hill Obs. (R)	415	596	
Boston	335	443	399
Nantucket	354	488	539
Pittsfield	539	838	844
Worcester	495	731	
MICHIGAN			
Alpena	574	1071	880
Detroit (City AP)	368	425	485
Detroit (M. Wayne Co.)	378	445	
Detroit (Willow Run)	358	409	499
Escanaba (U)	529	856	959
Flint	473	652	646
Grand Rapids	413	523	649
Lansing	460	611	
Marquette (U)	509	905	935
Muskegon	437	580	688
S. Ste. Marie	596	1057	1172
MINNESOTA			
Duluth	607	1033	1096
Internat. Falls	664	1162	1260
Minneapolis	503	724	641
Rochester	485	729	743
St. Cloud	524	795	880
MISSISSIPPI			
Jackson	71	71	69
Meridian	81	81	90
Vicksburg (U)	61	61	51
MISSOURI			
Columbia	213	224	330
Kansas City	148	160	284
St. Joseph	240	284	319
St. Louis (RFC)	193	198	240
St. Louis	213	220	278
Springfield	179	192	318
MONTANA			
Billings	416	604	719
Butte	756	1436	1483
Glasgow	521	774	862
Great Falls	455	731	871
Havre (U)	467	727	892
Helena	572	935	1039
Kalispell	664	1135	1095
Miles City	417	597	729
Missoula	655	955	994
NEBRASKA			
Grand Island	324	414	459
Lincoln (U)	266	321	396
Norfolk	381	499	561
North Platte	389	517	563
Omaha	282	345	424
Omaha N. Omaha AP	324	414	
Scottsbluff	436	602	593
Valentine	422	610	627
NEVADA			
Elko	575	807	809
Ely	574	796	855
Las Vegas	63	63	61
Reno	493	703	696
Tonopah	409	432	523
Winnemucca	518	708	705
NEW HAMPSHIRE			
Concord	560	770	787
Mt. Washington Obs. (R)	1158	2852	
NEW JERSEY			
Atlantic City	267	287	
Atlantic City (U)	233	249	259
Newark	247	261	348
Trenton (U)	284	315	340
NEW MEXICO			
Albuquerque	256	259	228
Clayton	338	401	386
Raton	460	590	632
Roswell	178	188	164
Silver City	224	224	
NEW YORK			
Albany	480	603	606
Binghamton	502	664	789
Buffalo	441	544	601
New York (U)	254	274	302
New York (LaGuardia)	215	226	278
Rochester	452	581	616
Schenectady	437	533	612
Syracuse	460	566	542
NORTH CAROLINA			
Asheville (U)	194	226	312
Cape Hatteras (R)	81	81	63
Charlotte	112	116	154
Greensboro	182	203	231
Raleigh	170	181	165
Wilmington	88	88	73
Winston-Salem	166	181	210
NORTH DAKOTA			
Bismarck	551	799	891
Devils Lake (U)	610	899	1038
Fargo	538	793	867
Grand Forks CAA	599	904	
Pembina	543	783	
Williston (U)	532	777	937
OHIO			
Akron	373	437	478
Cincinnati (U)	180	184	264
Cincinnati	252	270	378
Cincinnati Obs.	242	256	319
Cleveland	427	539	425
Columbus	306	340	414
Columbus (U)	267	293	358
Dayton	297	326	403
Mansfield	375	450	
Sandusky (U)	329	352	393
Toledo	393	464	501
Youngstown	426	512	457
OKLAHOMA			
Oklahoma City	96	98	168
Tulsa	88	88	170
OREGON			
Astoria	349	917	733
Burns (U)	543	840	818
Eugene	350	572	592
Meacham	597	1117	1089
Medford	318	392	403
Pendleton	347	462	457
Portland (U)	250	390	392
Portland	316	500	482
Roseburg	321	442	510
Salem	309	506	483
Sexton Summit (R)	420	819	782
PENNSYLVANIA			
Allentown	366	421	464
Erie	397	477	544
Harrisburg	307	330	377
Philadelphia (U)	207	209	252
Philadelphia	312	337	316
Pittsburgh (U)	284	302	354
Pittsburgh	352	414	491
Reading (U)	285	309	347
Scranton	446	550	522
Williamsport	422	488	494
RHODE ISLAND			
Block Island	309	395	445
RHODE ISLAND (Cont'd.)			
Providence	382	507	514
SOUTH CAROLINA			
Charleston (U)	35	35	34
Charleston	62	62	52
Columbia	85	85	82
Florence	83	83	94
Greenville	106	109	141
Spartanburg	117	125	143
SOUTH DAKOTA			
Huron	505	730	647
Pierre	402	553	
Rapid City	407	574	749
Sioux Falls	439	617	664
TENNESSEE			
Bristol	198	206	297
Chattanooga	160	166	193
Knoxville	142	145	212
Memphis (U)	87	87	111
Memphis	104	104	143
Nashville	148	148	176
Oak Ridge (U)	165	169	269
TEXAS			
Abilene	55	58	103
Amarillo	210	240	277
Austin	26	26	30
Brownsville	2	2	0
Corpus Christi	12	12	0
Dallas	45	45	53
Del Rio (U)	17	17	
El Paso	86	86	70
Ft. Worth	45	45	58
Galveston (U)	15	15	0
Galveston	11	11	0
Houston (U)	16	16	0
Houston	17	17	7
Laredo	4	4	0
Lubbock	135	143	196
Midland	64	66	80
Port Arthur	25	25	20
San Angelo	39	39	72
San Antonio	17	17	25
Victoria	17	17	0
Waco	36	36	44
Wichita Falls	61	62	120
UTAH			
Milford	442	487	576
Salt Lake City	419	454	469
Wendover	346	369	
VERMONT			
Burlington	600	878	759
VIRGINIA			
Lynchburg	226	255	285
Norfolk	139	139	161
Richmond	257	281	243
Roanoke	209	228	283
WASHINGTON			
Olympia	424	874	815
Seattle (U)	298	569	557
Seattle	313	551	643
Seattle-Tacoma	374	751	749
Spokane	503	756	758
Stampede Pass (R)	653	1650	1626
Tatoosh Island (R)	388	1301	1304
Walla Walla	314	405	
Walla Walla (U)	292	359	401
Yakima	431	667	603
WEST VIRGINIA			
Charleston	215	231	310
Huntington (U)	204	212	245
Parkersburg (U)	256	270	328
WISCONSIN			
Green Bay	544	812	788
La Crosse	438	600	630
Madison	484	664	653
Milwaukee	494	696	614
WYOMING			
Casper	535	792	845
Cheyenne	496	734	890
Lander	549	775	906
Sheridan	506	767	885

Data from airport unless otherwise specified.
U indicates Urban. R indicates Rural, sites.

STORM SUMMARY

OCTOBER 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	† DAMAGE	DEATHS	INJURIES	† DAMAGE PROP-ERTY	† DAMAGE CROPS	DEATHS	INJURIES	† DAMAGE PROP-ERTY	† DAMAGE CROPS	DEATHS	INJURIES	† DAMAGE PROP-ERTY	† DAMAGE CROPS	DEATHS	INJURIES	† DAMAGE PROP-ERTY	† DAMAGE CROPS	DEATHS	INJURIES	† DAMAGE PROP-ERTY	† DAMAGE CROPS	DEATHS	INJURIES	† DAMAGE PROP-ERTY	† DAMAGE CROPS
Alabama										0	1	4	0																
Alaska												1/5																	
Arizona *																													
Arkansas *																													
California										4	1	5	0																
Colorado																		0	0	3	0								
Connecticut														0	0	2	0												
Delaware *																													
Florida	3	2	1	0	4									0	0	4	0												
Georgia	1	1	0	0	3																								
Hawaii *																													
Idaho *																													
Illinois										0	0	4	0	0	1	4	0												
Indiana														0	0	5	0												
Iowa												4	3			4													
Kansas	1	1	0	0	4	0	0	5	0					0	2	4	3												
Kentucky								3	3																			3	3
Louisiana *																													
Maine *																													
Maryland *																													
Massachusetts										0	0	3	0	0	3	4	0	0	0	3	0								
Michigan																4													
Minnesota *																													
Mississippi *																													
Missouri *																													
Montana										0	0	3	0																
Nebraska *																													
Nevada *																													
New Hampshire														0	0	3	0												
New Jersey *																													
New Mexico						0	0	4	5																	0	0	5	6
New York *																													
North Carolina	1	1	0	0	4																								
North Dakota *																													
Ohio *																													
Oklahoma						0	0	5	6	0	0	4	0	0	0	4	0									0	0	5	4
Oregon						0	0	2	2	0	0	3	1	0	0	3	2									0	0	2/ 3	4
Pennsylvania *																													
Puerto Rico *																													
Rhode Island										0	0	3	0	0	0	2	0												
South Carolina						0	0	1	0	0	0	2	0																
South Dakota																2													
Tennessee						0	0	5	0	0	0	4	0	0	2	4	0									0	0	3	0
Texas	11	5	0	20	6	0	2	6	7	0	3	5	5	0	1	3	0									13	0	7	5
Utah *																													
Vermont *																													
Virgin Islands *																													
Virginia *																													
Washington												4																	
West Virginia *																													
Wisconsin														0	0	4	0												
Wyoming *																													

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
1 Includes wave action.
2/ Indicated amount is due to minor damage from rain.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

OCTOBER 1960

Significant flooding occurred during October in Texas. Flash floods resulted from torrential rains with major rises on the Navidad, Lavaca, Guadalupe, Mission, and Nueces Rivers. Heavy damage resulted to property and crops and at least 12 persons were drowned. The highest flood of record since 1903 occurred on Medio Creek at Pettus, Tex., and probably the greatest flood of record on the Los Olmos. Floods reported elsewhere were mostly light.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--The mean stage on the Mississippi River for the month was 0.9 foot below the long-term mean at Fort Ripley, Minn., and 0.7 foot below at Minneapolis. The mean stage at La Crosse, Wis., was 0.2 foot above the long-term mean which equalled the long-term mean at St. Paul, Minn. At Mankato, Minn., on the Minnesota River, the mean was 0.5 foot below the long-term mean. At Portage, Wis., on the Wisconsin River, the mean was above the long-term mean for the 6th consecutive month.

Missouri Basin.--The flooding on the Grand River in Missouri toward the end of the month was due to heavy rains on October 29 to 31. During the 48-hour period the rainfall totals ranged from 2.5 to 3.5 inches, with a small area around Trenton, Mo., receiving 5 inches. The only damage resulting was to unharvested crops which were planted after the July flood which was of greater magnitude.

This same storm caused light flooding on Pottawatomie Creek near Garnett in the Marais des Cygnes basin on the 31st. Flood damages were negligible.

Arkansas Basin.--Minor flooding occurred on the Cottonwood River on the 26th and 27th and on the Neosho River in Kansas on the 31st and November 1. This flooding was due to rainfall during the last 7 days of the month. The Verdigris River is controlled by the Fall River and Toronto Reservoirs, but a crest within 1 foot of flood stage was reported at Altoona, Kans., during the night of the 30th and 31st. No more than local moderate rises occurred on the Arkansas and its tributaries during the month.

Red Basin.--Minor local flooding occurred in the Salt Fork Basin of the Red River south of Altus, Okla., on the afternoon of the 13th. Damage was confined primarily to rural roads and crops. Some minor flooding occurred near Cordell, Okla., on creeks in the Washita River basin on the 18th.

There was slight flooding on the Sulphur River at Naples, Tex., from the 3d to the 5th and from the 11th to the 13th. The first period of flooding was due to rains which fell during September. The flooding from the 11th to the 13th was due to heavy rains that fell on the 4th and 5th. Little or no damage resulted from the flooding.

WEST GULF OF MEXICO DRAINAGE

Heavy rains (1 to 2 inches) on the 18th and 19th caused light flooding on the Little River at Cameron, Tex. The runoff was heavy as the soil was saturated from the 2- to 4-inch rains on the 14th. Additional rains of 2 to 6 inches on the 29th caused additional flooding on the Little River at Cameron, Tex., from the 29th to the 31st.

Torrential rains of 7 to 10 inches during the night of the 28th and 29th caused major flooding in Austin, Tex., and moderate to light flooding on the Colorado River below Austin. The heavy rains that caused the flooding were concentrated in a small area around Austin. Damage was heavy to cars, streets, bridges, and homes, especially in the southeast quarter of the city of Austin. Over 3,500 trunk line telephones were out of service, including all communications facilities to the airport. Two deaths from drowning occurred just southwest of the city when a car was washed from a bridge, and two deaths occurred near Giddings, Tex., under similar circumstances. Total damages in the city of Austin were estimated at $2.5 million. Some roads were washed out and there was considerable flooding of the lowlands downstream from Austin, but damage was generally light. Damage in the city of Austin was not from river overflow, but rather from local creeks and drainage systems not being able to accommodate the heavy rains.

Two minor crests occurred in the upper portion of the Guadalupe River in Texas, with continuous flooding at Gonzales from the 18th through the 21st and at Cuero from the 19th through the 23d. At Victoria, the rains on the evening of the 18th caused a very rapid rise in the river with considerable flooding in the city of Victoria, more from runoff than from the flooding of the river. The 8 inches of rain at Goliad, Tex., caused considerable flooding in that city, and this was mostly from runoff rather than flooding of the river. On the afternoon and evening of the 25th a very heavy rain occurred in the vicinity of Kenedy, Tex., causing the overflow of two small creeks, Nichols and Escondido. Two persons were drowned as their cars were washed off low water crossings. Heavy rains occurred on the same evening in the Victoria, Tex., area, causing another very rapid rise in the Guadalupe River from just below flood stage on the 25th to 8.7 feet above flood stage on the 26th. On the night of the 28-29th nearly 5 inches of rain occurred in the San Marcos area causing some damage from runoff and from flash flooding over small creeks in the area. Except for the damage that occurred in the Kenedy area mentioned above, damage from these floods was fairly light.

Heavy rains over the lower Nueces on the 16th and 17th caused flooding at Calallen, Tex., beginning on the 16th. The rainfall averaged 6 to 8 inches with amounts up to 15.15 inches on the Chapman Ranch, 14.16 inches at Refugio, and 9 inches at Mathis. The flood of farmlands, streets, and highways was the highest in several years. Over 500 persons were evacuated from their homes. Heavy rains on the 18th and 19th of 4 to 5 inches on the middle and lower Nueces caused additional flooding of farmlands, streets, and highways. Flooding occurred in the north portion of Odem, with many homes reported flooded. Flood damage was limited to streets, highways, and railroad embankments and also some damage to homes and business establishments. Rains of 3 to 4 inches on the 24th resulted in some flooding on Gulf drainage streams in Kelberg, Nueces, and Jim Wells Counties and also on the lower Frio and lower Atascosa Rivers. The town of Bishop, Tex., again reported several homes flooded; however, no extensive damage was reported. Heavy rains on the 25th on the upper Medio Creek resulted in flash flooding downstream with a major flood in the town of Pettus. Rainfall on the upper Medio creek averaged 8 to 10 inches with the heaviest 24-hour amount of 15.5 inches near

Burnell, 8 miles north-northeast of Pettus. Considerable flooding occurred on tributary creeks to the lower Atascosa and the lower Nueces, but most of this area was farmlands with little or no damage reported. The flood waters rose rapidly at Pettus during the night and resulted in the highest flood of record since 1903, when a similar flood occurred. Many homes and the business district was damaged. Locally heavy rains over the West Nueces of 3 to 4 inches caused flash flooding on the West Nueces and the upper Nueces on the 28th and 29th. Two children were drowned when the family car was washed from a flooded low water crossing on the West Nueces on the 29th. Considerable flooding continued on the lower Nueces from below Three Rivers to Calallen from the 17th to the 31st. The overflow was confined largely to ranch and farmlands with little or no damage.

Heavy rains (3 to 6 inches) on the evening of the 24th and the morning of the 25th caused a flash flood on the Los Olmos Arroyo, which passes through the northeast corner of Rio Grande City, Tex., and empties into the Rio Grande about 2 miles east of Rio Grande City. The peak stage was 21.6 feet at 6 p.m. on the 24th, and corresponds to a peak flow of 13,550 c.f.s. This was probably the greatest flood of record on the Los Olmos. The flood was aggravated as the arroyo channel was clogged at the railroad bridge, which is a short distance north of U. S. 83 highway bridge. This clogging with debris caused considerable backwater in the northeast section of Rio Grande City.

FLOOD STAGE DATA

(All dates in October unless otherwise specified)

OCTOBER 1960

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
	Ft.			*Ft.*	
MISSISSIPPI SYSTEM					
Missouri Basin					
Grand: Chillicothe, Mo.	24	31	Nov. 1	24.9	31-Nov.1
Sumner, Mo.	26	31	Nov. 2	28.9	Nov. 1
Pottawatomie Creek: Garnett, Kans.	26	31	31	26.4	31
Arkansas Basin					
Cottonwood: Emporia, Kans.	20	26	27	21.4	27
Neosho: LeRoy, Kans.	23	31	31	24.05	31
Iola, Kans.	15	31	Nov. 1	16.25	31
Chanute, Kans.	20	31	Nov. 1	20.85	Nov. 1
Red Basin					
Sulphur: Naples, Tex.	22	3	5	23.0	5
		11	13	24.3	12
WEST GULF OF MEXICO DRAINAGE					
Little: Cameron, Tex.	30	19	20	32.25	20
		29	31	35.5	30
Colorado: Smithville, Tex.	25	29	30	30.5	30
Columbus, Tex.	24	31	Nov. 1	25.9	31
Wharton, Tex.	26	Nov. 1	Nov. 2	26.6	Nov. 1
WEST GULF OF MEXICO DRAINAGE (Cont'd.)					
Navidad Ganado, Tex.	21	19	23	28.2	20
		26	27	25.6	27
		30	Nov. 1	24.1	31
Lavaca: Edna, Tex.	21	19	21	27.3	20
		26	28	27.1	27
Guadalupe Gonzales, Tex.	20	18	21	26.9	19
				29.1	20
		27	27	20.5	27
		29	Nov. 1	34.5	30
Cuero, Tex.	23	19	23	28.0	21
		31	Nov. 3	31.2	Nov. 1
Victoria, Tex.	21	18	Nov. 5	28.8	19
				29.3	23
				29.7	26
				28.4	30
				29.95	Nov. 3
Nueces: Tilden (nr), Tex.	14	30	31	14.8	31
Calallen, Tex.	7	16	1/	9.3	21
				8.4	30

* Provisional

1/ Continued at end of month

RAWINSONDE DATA

Average monthly values

OCTOBER 1960

ALBANY, N. Y. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	5.3	88	266	3.1
1,000	31	127			261	2.9
950	31	550	7.8	66	272	8.0
900	31	995	5.9	61	285	11.5
850	31	1,461	4.2	59	290	14.2
800	31	1,954	2.6	52	285	16.3
750	31	2,475	1.0	47	278	18.7
700	31	3,028	- 1.1	43	274	21.0
650	31	3,613	- 3.9	39	271	23.9
600	31	4,245	- 7.2	42	266	27.8
550	31	4,914	-11.3	43	265	31.1
500	31	5,644	-16.0	43	262	30.9
450	31	6,425	-21.0	41	263	34.2
400	31	7,291	-27.2	40	263	36.5
350	31	[illegible]	-34.5		266	35.2
300	31	9,300	-42.6		265	40.4
250	31	10,511	-50.4		268	43.1
200	30	11,944	-56.2		273	46.4
175	30	12,790	-57.7		273	43.7
150	30	13,764	-57.6		270	44.7
125	30	14,913	-58.4		269	38.9
100	30	16,315	-59.5		265	33.0
80	30	17,716	-58.2		266	26.2
60	30	19,533	-57.2		261	22.5
50	30	20,688	-56.6		265	17.7
40	30	22,107	-55.5		256	16.7
30	[illegible]	23,946	-54.0		258	22.0
25	27	25,122	-52.5		258	25.3
20	[illegible]	26,578	-50.5		263	29.5
15	11	28,448	-49.2			

ALBUQUERQUE, N. MEX. (839 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,619	8.7	65	42	1.7
1,000	31	137				
950	31	566				
900	31	1,024				
850	31	1,508				
800	31	2,013	9.7	52	339	1.9
750	31	2,541	6.8	51	285	6.4
700	31	3,110	3.4	52	284	8.2
650	31	3,699	- .6	53	273	8.5
600	31	4,343	- 4.4	47	253	12.4
550	31	5,016	- 8.3		260	13.0
500	31	5,758	-12.9		257	16.1
450	31	6,547	-18.5		255	17.5
400	31	7,424	-25.1		263	18.5
350	31	8,379	-32.7		262	20.8
300	31	9,446	-40.8		263	24.1
250	31	10,666	-48.7		264	33.4
200	30	12,107	-55.1		261	46.2
175	30	12,954	-57.9		260	42.2
150	30	13,920	-60.7		261	37.7
125	30	15,046	-64.0		265	32.6
100	29	16,412	-65.4		271	25.3
80	28	17,771	-64.8		276	16.3
60	28	19,539	-61.9		272	9.5
50	28	20,671	-60.3		287	8.0
40	28	22,067	-57.7		284	9.5
30	26	23,901	-54.2		276	12.4
25	24	25,083	-52.5		267	16.5
20	21	26,534	-50.9		266	19.2
15	14	28,420	-49.6		266	17.9

AMARILLO, TEXAS (892 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,095	10.1	82	204	2.3
1,000	31	130				
950	31	558				
900	31	1,015				
850	31	1,499	13.0	56	224	8.2
800	31	2,007	11.2	49	240	8.4
750	31	2,541	8.2	44	253	8.5
700	31	3,111	4.4	44	258	9.5
650	31	3,705	.3	44	266	11.5
600	31	4,348	- 4.0	44	265	14.0
550	31	5,023	- 8.5	38	265	16.1
500	31	5,764	-12.6		259	20.0
450	31	6,552	-18.1		256	22.9
400	31	7,432	-25.0		257	24.9
350	31	8,388	-32.0		260	26.6
300	31	9,461	-39.5		259	29.7
250	31	10,687	-47.8		264	34.2
200	31	12,134	-55.7		261	42.7
175	30	12,976	-59.0		260	47.2
150	30	13,936	-61.8		262	44.1
125	29	15,058	-64.2		266	34.0
100	26	16,414	-65.5		268	22.5
80	25	17,772	-64.1		264	16.9
60	23	19,540	-62.7		286	9.1
50	22	20,673	-60.4		283	7.4
40	19	22,083	-57.7		277	6.0
30	15	23,915	-54.5		269	11.3
25	14	25,093	-51.9		268	15.2
20	13	26,544	-49.4			
15	6	28,453	-47.5			

ANCHORAGE, ALASKA (996 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	30	1.7	77	9	1.4
1,000	31	7			3	2.1
950	31	408	2.2	66	30	2.9
900	31	844	.8	66	81	3.1
850	31	1,302	- 1.4	67	120	4.5
800	31	1,782	- 4.4	69	130	8.2
750	31	2,284	- 7.7	68	144	9.5
700	31	2,822	-11.2	65	150	12.4
650	31	3,382	-14.6	59	162	11.9
600	31	3,989	-18.3	54	175	9.3
550	31	4,627	-22.4	52	185	7.8
500	31	5,328	-27.0	52	190	7.2
450	31	6,072	-32.1	48	205	4.9
400	31	6,903	-37.8		151	3.7
350	31	7,811	-44.0		185	4.1
300	31	8,834	-49.0		224	5.2
250	31	10,026	-50.2		218	9.9
200	31	11,490	-48.3		237	13.2
175	31	12,371	-47.8		233	15.5
150	31	13,388	-47.9		242	17.1
125	31	14,589	-48.5		242	16.5
100	31	16,055	-49.5		245	16.9
80	31	17,514	-50.0		248	14.8
60	30	19,388	-51.4		258	13.4
50	30	20,570	-52.0		254	9.5
40	30	22,013	-52.5		264	8.4
30	29	23,876	-51.6		270	4.3
25	28	25,065	-51.2		280	3.7
20	27	26,516	-50.7		315	2.5
15	23	28,395	-50.0		323	2.9

ANNETTE, ALASKA (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	8.3	91	146	7.8
1,000	31	79			146	8.5
950	31	501	6.1	88	168	14.2
900	31	942	3.5	86	180	16.3
850	31	1,405	1.0	85	194	16.7
800	31	1,890	- 1.9	82	208	17.3
750	31	2,400	- 4.5	75	214	19.2
700	31	2,942	- 7.9	74	219	21.0
650	31	3,513	-11.1	72	224	22.9
600	31	4,127	-14.4	67	234	28.4
550	31	4,777	-17.9	60	240	28.6
500	31	5,489	-22.5	57	240	30.1
450	31	6,251	-27.7	53	244	33.2
400	31	7,094	-33.6	52	237	34.6
350	31	8,018	-39.9		246	36.1
300	31	9,058	-46.0		259	37.7
250	31	10,256	-51.2		267	40.0
200	31	11,698	-53.5		266	41.2
175	31	12,558	-53.4		261	36.9
150	30	13,546	-54.4		262	33.0
125	27	14,702	-54.4		260	30.5
100	26	16,134	-54.7		268	22.7
80	25	17,559	-54.8		267	15.3
60	24	19,401	-55.7		293	9.5
50	24	20,562	-56.3		291	8.7
40	23	21,981	-56.3		295	6.4
30	22	23,813	-55.6		315	5.8
25	19	24,977	-54.9		339	4.5
20	15	26,403	-53.7			
15	6	28,207	-52.2			

ATHENS, GA. (988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	13.0	94	21	2.7
1,000	31	142				
950	31	578	16.0	69	63	2.1
900	31	1,039	13.9	67	259	1.9
850	31	1,519	11.5	61	272	6.0
800	31	2,024	9.0	54	268	8.4
750	31	2,554	6.0	51	265	9.9
700	31	3,119	3.1	48	274	11.7
650	31	3,712	.3	40	273	13.8
600	31	4,355	- 3.0	34	272	18.7
550	31	5,031	- 7.2		267	19.6
500	31	5,776	-12.1		267	24.1
450	31	6,565	-17.3		272	27.2
400	31	7,447	-23.6		273	32.1
350	31	8,409	-30.4		272	35.8
300	31	9,489	-38.0		271	42.7
250	31	10,722	-46.6		279	50.3
200	31	12,174	-55.6		276	57.3
175	30	13,020	-58.9		276	54.2
150	30	13,980	-61.9		274	48.8
125	29	15,100	-64.7		281	33.8
100	29	16,455	-66.6		277	27.2
80	29	17,810	-64.7		280	16.1
60	29	19,580	-60.6		273	10.1
50	29	20,723	-57.7		274	9.9
40	28	22,138	-55.2		271	9.3
30	27	23,984	-52.0		266	10.9
25	25	25,163	-50.3		264	11.1
20	[illegible]	26,626	-48.4		274	9.1
15	20	28,533	-46.0		270	12.6
10	7	31,240	-45.0			

BARROW, ALASKA (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	-11.1	83	78	11.3
1,000	31	80			68	11.9
950	31	472	-11.3	75	81	15.0
900	31	889	-11.5	68	92	13.8
850	31	1,327	-11.7	62	94	13.0
800	31	1,790	-13.0	56	93	11.3
750	31	2,278	-15.2	52	95	8.2
700	31	2,800	-17.6	48	100	5.2
650	31	3,348	-20.5	44	100	3.7
600	31	3,941	-23.7	40	184	3.1
550	31	4,567	-27.4	38	220	5.1
500	31	5,255	-31.6		243	7.6
450	31	5,987	-36.4		248	9.5
400	31	6,802	-41.6		251	12.8
350	31	7,698	-47.0		247	15.3
300	31	8,706	-52.5		251	18.5
250	31	9,881	-53.1		248	19.6
200	31	11,328	-50.5		247	19.6
175	31	12,201	-49.6		240	18.7
150	31	13,212	-49.0		243	19.2
125	31	14,409	-48.8		243	18.7
100	29	15,869	-48.8		244	19.0
80	29	17,332	-49.6		244	21.4
60	28	19,212	-50.4		244	19.6
50	28	20,399	-50.8		249	20.0
40	28	21,850	-51.4		248	20.0
30	28	23,717	-51.2		254	19.0
25	28	24,902	-50.9		258	21.0
20	28	26,354	-50.4		258	19.6
15	20	28,233	-49.9		272	30.7
10	5	30,915	-47.4			

BARTER IS., ALASKA (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	15	- 8.3	89	87	8.0
1,000	29	76			72	5.2
950	29	471	- 8.9	73	110	13.2
900	29	891	- 9.2	70	108	10.5
850	29	1,332	-10.4	66	118	7.2
800	29	1,799	-11.6	63	136	7.6
750	29	2,293	-13.6	58	176	6.2
700	29	2,813	-16.2	53	199	6.0
650	29	3,362	-18.6	46	222	6.8
600	29	3,960	-22.1	42	244	10.9
550	29	4,588	-26.3	41	247	13.6
500	29	5,277	-30.8	38	246	16.3
450	29	6,006	-35.8		245	17.3
400	29	6,827	-41.3		250	19.0
350	29	7,723	-46.9		255	22.9
300	29	8,733	-52.0		257	22.7
250	29	9,907	-53.1		259	22.7
200	28	11,361	-50.0		260	25.3
175	28	12,236	-48.9		263	18.5
150	28	13,249	-48.7		259	21.2
125	26	14,439	-48.7		259	21.2
100	22	15,909	-49.4		261	24.3
80	21	17,369	-49.8		261	27.8
60	20	19,241	-50.9		267	29.7
50	18	20,434	-51.7		266	24.9
40	18	21,878	-52.4		258	26.2
30	16	23,732	-53.0		269	18.7
25	12	24,925	-52.5		293	17.7
20	9	26,359	-51.4			

BETHEL, ALASKA (995 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	- 2.4	88	4	4.1
1,000	31	- 4				
950	31	409	- 1.5	76	30	12.0
900	31	835	- 2.6	67	43	8.2
850	31	1,287	- 4.4	60	54	5.1
800	31	1,764	- 6.3	53	116	2.7
750	31	2,267	- 8.6	47	141	3.3
700	31	2,800	-11.5	46	128	2.5
650	31	3,361	-14.9	45	119	1.9
600	31	3,967	-18.5	42	133	2.7
550	31	4,608	-22.5	46	157	3.1
500	31	5,306	-27.3	47	162	3.1
450	31	6,053	-32.3	45	170	5.2
400	31	6,881	-37.8		173	5.6
350	31	7,791	-43.3		177	2.9
300	31	8,815	-49.1		259	5.4
250	31	10,004	-50.7		271	12.4
200	31	11,464	-48.8		263	17.9
175	31	12,344	-48.0		258	16.9
150	31	13,361	-48.0		256	17.1
125	31	14,561	-48.7		245	17.5
100	31	16,028	-49.0		247	18.5
80	31	17,494	-49.1		241	18.1
60	30	19,368	-50.5		252	14.4
50	28	20,546	-51.3		239	15.0
40	24	22,001	-51.7		254	11.5
30	21	23,865	-51.6		244	8.2
25	21	25,050	-51.2		257	7.4
20	17	26,508	-50.8		279	2.1
15	12	28,371	-51.6			

BISMARCK, N. DAK. (955 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	2.9	64	284	2.7
1,000	31	129				
950	31	548			304	2.9
900	31	991	7.2	53	302	8.9
850	31	1,461	6.7	49	312	12.2
800	31	1,958	4.5	50	295	15.0
750	31	2,477	1.2	53	291	18.1
700	31	3,033	- 1.9	50	292	20.6
650	31	3,614	- 5.7	52	292	23.3
600	31	4,244	- 8.8	45	292	25.8
550	31	4,907	-12.4	42	292	29.7
500	31	5,637	-16.9	39	287	30.9
450	31	6,411	-22.5	38	288	32.4
400	31	7,275	-29.0	38	287	32.3
350	31	8,217	-35.8		290	35.9
300	31	9,272	-43.6		287	39.8
250	31	10,479	-50.5		286	35.0
200	31	11,915	-55.8		282	35.9
175	31	12,762	-57.3		284	36.5
150	31	13,733	-58.4		282	30.9
125	31	14,878	-59.4		284	27.8
100	31	16,272	-60.3		290	20.6
80	31	17,666	-59.6		295	15.9
60	29	19,474	-59.1		305	8.9
50	29	20,618	-58.8		311	8.7
40	28	22,205	-58.1		311	8.2
30	24	23,841	-56.8		311	6.4
25	19	25,007	-55.2		301	6.6
20	17	26,436	-53.7		292	9.9
15	12	28,289	-52.5		281	13.2

BOISE, IDAHO (918 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	7.0	65	140	3.9
1,000	31	157				
950	31	586				
900	31	1,034	10.8	49	132	2.3
850	31	1,510	9.3	44	304	1.9
800	31	2,010	6.4	46	298	5.8
750	31	2,535	3.5	47	282	11.5
700	31	3,093	.1	47	282	9.5
650	31	3,679	- 3.2	44	283	13.8
600	31	4,313	- 7.1	42	280	16.9
550	31	4,976	-11.4	43	281	20.8
500	31	5,711	-16.2	39	287	20.0
450	31	6,491	-21.5	35	288	22.2
400	31	7,356	-27.5		295	25.1
350	31	8,304	-34.4		299	24.5
300	31	9,365	-42.0		302	25.3
250	31	10,580	-49.2		303	26.4
200	31	12,020	-56.1		303	26.0
175	31	12,864	-58.6		293	24.7
150	31	13,830	-59.9		282	23.7
125	31	14,966	-61.1		281	22.0
100	31	16,348	-62.2		277	15.9
80	30	17,732	-61.5		282	11.9
60	30	19,520	-60.6		302	8.5
50	30	20,655	-60.0		305	6.0
40	30	22,052	-58.9		321	4.7
30	28	23,869	-57.2		330	5.4
25	27	25,029	-55.8		320	5.2
20	23	23,450	-54.4		313	5.6
15	19	28,304	-52.7		289	9.7
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BROWNSVILLE, TEX. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	22.3	91	122	2.1
1,000	31	113	23.5	83	136	7.0
950	31	558	21.5	77	155	14.6
900	31	1,029	18.7	74	166	13.0
850	31	1,519	16.2	65	176	10.5
800	31	2,034	14.2	55	182	8.0
750	31	2,573	11.6	50	221	5.1
700	31	3,152	8.5	49	251	6.4
650	31	3,752	4.1	54	278	7.8
600	31	4,407	.0	53	272	12.0
550	31	5,090	- 3.9	44	271	15.5
500	31	5,847	- 8.3	38	261	17.7
450	31	6,653	-13.5	36	264	21.6
400	31	7,545	-19.2	37	264	28.0
350	30	8,523	-26.0		265	35.6
300	30	9,621	-34.2		267	41.8
250	29	10,871	-43.7		266	45.1
200	29	12,333	-55.2		264	50.3
175	29	13,173	-61.5		264	51.3
150	28	14,113	-67.7		267	47.8
125	28	15,196	-72.8		266	35.0
100	28	16,500	-73.6		272	21.0
80	28	17,811	-70.5		302	7.6
60	28	19,554	-62.4		87	6.2
50	26	20,684	-59.8		122	6.4
40	25	22,093	-56.4		101	5.2
30	25	23,935	-52.8		71	8.4
25	24	25,115	-50.9		88	11.3
20	20	26,571	-49.5		99	9.3
15	16	28,464	-46.0			

BUFFALO N. Y. (991 MB)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	218	7.0	81	206	2.1
1,000	30	144				
950	30	566	7.9	71	247	7.2
900	30	1,013	6.3	64	270	9.1
850	30	1,480	4.1	58	286	11.7
800	30	1,971	2.4	53	285	13.6
750	30	2,485	.2	51	279	16.3
700	30	3,042	- 2.4	51	279	17.7
650	30	3,620	- 5.4	51	281	21.6
600	30	4,251	- 8.5	45	280	22.5
550	30	4,916	-12.5	41	281	26.0
500	30	5,643	-16.9	36	278	26.4
450	30	6,419	-21.8		277	29.1
400	30	7,284	-27.9		277	32.6
350	30	8,230	-34.7		278	35.8
300	30	9,290	-42.0		277	40.0
250	30	10,504	-49.6		275	43.9
200	29	11,941	-55.4		273	44.9
175	29	12,790	-56.9		272	42.4
150	28	13,767	-57.8		272	34.4
125	27	14,923	-59.2		274	30.5
100	27	16,320	-59.7		274	24.7
80	27	17,719	-58.8		274	18.3
60	26	19,537	-57.7		272	14.6
50	24	20,693	-57.0		279	13.8
40	24	22,110	-55.6		276	11.5
30	22	23,954	-53.5		270	16.9
25	16	25,110	-52.6		269	19.4
20	13	26,548	-50.4		266	21.2
15	8	28,469	-47.8			

BURRWOOD, LA. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	22.6	83	64	3.3
1,000	31	127	21.9	79	65	3.9
950	31	574	19.0	71	108	2.7
900	31	1,035	17.0	59	162	2.1
850	31	1,520	14.3	53	217	2.5
800	31	2,030	11.6	49	268	3.7
750	31	2,570	9.3	39	278	6.6
700	31	3,137	6.5	37	280	10.7
650	31	3,739	3.2	34	277	14.6
600	31	4,386	.1		272	17.1
550	31	5,072	- 4.1		268	18.8
500	31	5,823	- 8.9		266	22.7
450	31	6,627	-14.4		267	27.8
400	31	7,514	-20.4		267	33.8
350	31	8,489	-27.3		268	37.3
300	31	9,583	-35.1		270	46.0
250	31	10,830	-44.4		274	55.0
200	31	12,290	-55.1		279	63.3
175	31	13,133	-60.6		280	62.0
150	30	14,080	-65.7		281	49.9
125	29	15,177	-69.2		275	34.4
100	29	16,502	-71.4		282	20.4
80	29	17,828	-68.4		294	9.5
60	29	19,579	-61.9		279	1.0
50	29	20,717	-58.5		223	2.5
40	28	22,128	-55.0		275	1.4
30	25	23,974	-52.2		82	3.9
25	23	25,151	-50.5		75	4.7
20	22	26,612	-48.7		51	.8
15	15	28,485	-47.1		217	10.3
10	5	31,157	-42.0			

CAPE HATTERAS, N. C. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	16.8	85	356	3.7
1,000	31	129	17.7	77	357	6.0
950	31	563	15.3	73	345	5.1
900	31	1,024	12.9	69	317	5.2
850	31	1,503	10.7	62	286	6.8
800	31	2,007	8.4	57	275	9.9
750	31	2,533	5.6	49	277	12.8
700	31	3,100	2.7	46	273	15.5
650	31	3,693	.0	42	269	17.3
600	31	4,335	- 3.6	37	268	17.9
550	31	5,013	- 7.6	32	273	23.7
500	31	5,754	-12.3		264	23.5
450	31	6,545	-17.6		265	26.6
400	31	7,424	-23.9		267	31.1
350	31	8,385	-31.0		265	37.5
300	31	9,462	-38.5		266	42.2
250	31	10,692	-47.5		264	48.4
200	31	12,138	-55.8		270	53.6
175	31	12,983	-58.8		271	51.9
150	30	13,946	-61.5		272	43.5
125	30	15,071	-63.6		271	39.4
100	30	16,436	-64.6		272	29.1
80	29	17,801	-63.4		270	18.5
60	28	19,590	-58.8		260	12.8
50	26	20,740	-56.3		267	15.0
40	22	22,166	-54.3		251	10.3
30	19	24,015	-51.4		245	14.2
25	19	25,203	-49.8		260	12.8
20	15	26,660	-48.0		254	12.6
15	9	28,608	-46.2			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

OCTOBER 1960

CARIBOU, ME. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	191	2.4	92	256	4.3
1,000--	31	109				
950----	31	522	3.0	76	285	7.2
900----	31	962	.9	73	293	10.3
850----	31	1,421	- .5	66	300	12.8
800----	31	1,905	- 1.7	54	295	14.6
750----	31	2,419	- 3.6	49	286	17.3
700----	31	2,961	- 5.9	42	286	20.8
650----	31	3,539	- 8.7	37	278	24.1
600----	31	4,157	-12.1	34	277	27.8
550----	31	4,816	-16.0	34	278	30.7
500----	31	5,531	-20.4	34	274	36.3
450----	31	6,300	-25.6	33	270	42.0
400----	31	7,149	-31.3	33	270	45.1
350----	31	8,083	-37.6		270	53.6
300----	31	9,132	-44.5		271	56.2
250----	31	10,339	-50.0		273	47.2
200----	30	11,782	-52.9		269	46.0
175----	30	12,643	-53.4		271	44.7
150----	30	13,634	-54.5		274	36.5
125----	30	14,801	-55.1		266	32.6
100----	30	16,223	-56.2		266	24.3
80-----	29	17,640	-55.8		262	17.1
60-----	29	19,470	-56.1		265	14.0
50-----	29	20,628	-56.4		266	16.3
40-----	24	22,038	-55.5		257	13.8
30-----	20	23,873	-54.7		255	16.5
25-----	19	25,047	-53.5		259	21.6
20-----	19	26,487	-52.2		267	25.1
15-----	15	28,392	-48.8		260	28.2
10-----	5	31,100	-45.8			

CHARLESTON, S. C. (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	13	15.3	91	356	3.1
1,000--	31	144	18.1	81	14	2.9
950----	31	580	17.3	70	13	1.0
900----	31	1,046	15.0	66	289	3.1
850----	31	1,528	12.5	58	276	5.4
800----	31	2,035	9.9	52	263	8.7
750----	31	2,565	7.1	46	271	9.3
700----	31	3,135	4.0	44	267	11.9
650----	31	3,732	.7	41	267	16.3
600----	30	4,376	- 2.5	36	272	17.1
550----	30	5,052	- 6.7	32	274	19.0
500----	30	5,802	-11.4		279	21.4
450----	30	6,592	-16.9		278	23.9
400----	30	7,478	-23.2		275	27.0
350----	29	8,442	-30.1		277	31.9
300----	28	9,518	-38.1		277	37.5
250----	27	10,757	-46.6		275	42.7
200----	26	12,208	-55.3		278	47.6
175----	24	13,057	-59.1		279	47.2
150----	23	14,022	-62.2		278	38.7
125----	21	15,148	-65.0		279	33.0
100----	21	16,504	-66.4		276	22.3
80-----	21	17,859	-65.1		285	12.2
60-----	21	19,634	-60.0		286	8.0
50-----	18	20,790	-57.3		264	8.4
40-----	16	22,214	-54.2		299	6.8
30-----	15	24,080	-50.2		230	4.9
25-----	14	25,273	-49.2		230	2.5
20-----	12	26,759	-46.8		201	2.1
15-----	9	28,670	-45.3			
10-----						

COLD BAY, ALASKA (997 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	27	4.4	[illegible]	258	6.4
1,000--	31	1			295	12.2
950----	31	417	2.0	80	279	9.9
900----	31	852	- .6	78	286	10.5
850----	31	1,307	- 3.0	74	286	11.7
800----	31	1,785	- 5.6	65	275	16.9
750----	31	2,288	- 8.1	56	281	14.4
700----	31	2,822	-11.1	52	278	13.8
650----	31	3,386	-14.3	47	275	15.3
600----	31	3,991	-17.9	44	270	17.5
550----	31	4,633	-22.0	43	267	17.5
500----	31	5,332	-26.5	43	266	19.6
450----	31	6,078	-31.0	40	265	21.4
400----	31	6,912	-36.3		258	21.2
350----	31	7,828	-41.4		252	23.5
300----	31	8,865	-45.6		253	29.0
250----	31	10,073	-47.9		256	30.3
200----	30	11,548	-49.1		261	34.6
175----	29	12,403	-48.6		271	29.0
150----	29	13,415	-49.1		271	26.4
125----	29	14,610	-49.8		265	24.5
100----	29	16,066	-50.8		269	19.6
80-----	29	17,519	-51.3		262	14.8
60-----	25	19,394	-52.6		263	11.7
50-----	23	20,573	-53.5		265	8.9
40-----	22	22,007	-54.1		270	7.4
30-----	21	23,851	-53.5		277	1.4
25-----	18	25,026	-53.0		336	.8
20-----	18	26,469	-52.0		78	3.3
15-----	12	28,321	-50.5			
10-----						

COLUMBIA, MO. (987 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	238	10.1	86	109	1.7
1,000--	31	128				
950----	31	559	12.7	69	153	2.5
900----	31	1,012	11.9	65	274	4.5
850----	31	1,489	9.9	59	292	8.2
800----	31	1,991	7.6	52	289	9.5
750----	31	2,519	5.1	48	292	10.9
700----	31	3,081	2.4	48	290	13.0
650----	31	3,672	- .9	43	285	14.6
600----	31	4,311	- 4.7	42	285	16.1
550----	31	4,984	- 8.9	40	283	18.5
500----	31	5,722	-13.7	36	284	19.8
450----	31	6,508	-19.4	37	282	20.2
400----	31	7,380	-25.7		281	21.0
350----	31	8,334	-32.8		278	25.5
300----	31	9,403	-40.3		275	28.2
250----	31	10,624	-49.0		[illegible]	[illegible]
200----	30	12,073	-56.2		279	40.8
175----	28	12,917	-58.3		280	36.3
150----	28	13,883	-60.1		[illegible]	[illegible]
125----	27	15,024	-62.1		281	31.5
100----	24	16,409	-63.4		279	24.3
80-----	23	17,781	-62.4		276	16.9
60-----	21	19,561	-60.5		281	10.9
50-----	20	20,699	-59.0		281	10.3
40-----	20	22,107	-56.7		269	11.9
30-----	20	23,940	-54.2		271	14.2
25-----	20	25,113	-52.5		272	17.1
20-----	18	26,568	-50.2		268	22.2
15-----	12	28,449	-47.6			
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DAYTON, OHIO (982 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	297	8.3	[illegible]	20	0.6
1,000--	31	[illegible]				
950----	31	577	10.8	66	281	.8
900----	31	1,024	9.2	63	270	6.4
850----	31	1,497	7.0	58	279	9.3
800----	31	1,994	5.2	50	285	12.0
750----	31	2,522	3.0	48	285	13.6
700----	31	3,077	.3	48	287	15.9
650----	31	3,666	- 3.1	[illegible]	283	18.1
600----	31	4,298	- 6.5	[illegible]	280	20.4
550----	31	4,968	-10.2	37	277	22.2
500----	31	5,702	-14.7		280	25.1
450----	31	6,484	-20.4		282	25.5
400----	31	7,354	-26.7		281	27.8
350----	31	8,304	-33.9		280	29.1
300----	31	9,367	-41.5		[illegible]	30.1
250----	31	10,582	-49.8		273	36.3
200----	31	12,018	-56.6		271	40.6
175----	30	12,862	-58.7		279	41.0
150----	30	13,827	-60.1		278	38.3
125----	29	14,959	-61.6		275	32.4
100----	29	16,339	-61.8		277	27.2
80-----	29	17,721	-61.5		280	24.7
60-----	29	19,515	-59.3		281	17.1
50-----	28	20,664	-58.1		277	13.8
40-----	27	22,076	-56.2		268	13.4
30-----	25	23,906	-53.8		270	16.3
25-----	23	25,090	-51.6		263	20.2
20-----	21	26,530	-50.2		258	26.4
15-----	15	28,415	-47.2		262	31.3
10-----						

DENVER, COLO. (839 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,611	5.6	65	219	3.5
1,000--	31	150				
950----	31	578				
900----	31	1,030				
850----	31	1,501				
800----	31	2,004	9.7	46	284	6.0
750----	31	2,535	7.1	44	304	8.4
700----	31	3,101	3.5	45	290	8.0
650----	31	3,693	- .5	46	283	8.4
600----	31	4,334	- 5.0	47	279	8.2
550----	31	5,004	- 9.7	45	275	7.8
500----	31	5,741	-14.6	39	276	11.7
450----	31	6,525	-20.6	37	281	13.6
400----	31	7,391	-27.1	35	278	15.9
350----	31	8,339	-34.5		274	17.7
300----	31	9,399	-42.5		269	20.2
250----	31	10,611	-50.0		254	24.3
200----	31	12,047	-56.4		261	26.2
175----	31	12,891	-58.5		266	27.0
150----	31	13,858	-60.2		268	23.3
125----	31	14,990	-62.1		272	21.8
100----	31	16,365	-63.4		275	18.3
80-----	31	17,737	-63.1		277	15.3
60-----	30	19,510	-61.4		294	12.6
50-----	30	20,643	-60.4		295	8.9
40-----	29	22,039	-58.8		292	8.2
30-----	28	23,849	-56.8		290	10.1
25-----	28	25,008	-55.3		288	13.2
20-----	26	26,436	-53.5		276	16.7
15-----	18	28,335	-50.8		276	24.3
10-----	9	30,971	-50.3			

DODGE CITY, KANS. (925 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	792	9.9	82	232	1.9
1,000--	30	133				
950----	30	568				
900----	30	1,018	13.4	61	221	6.2
850----	30	1,500	13.3	50	233	8.9
800----	30	2,008	10.9	47	241	9.1
750----	30	2,544	7.8	43	261	8.2
700----	30	3,109	3.9	41	272	8.4
650----	30	3,702	- .4	45	276	7.8
600----	30	4,342	- 4.8	45	269	10.5
550----	30	5,017	- 9.3	42	274	10.3
500----	30	5,752	-14.0	37	272	12.6
450----	30	6,538	-19.5		268	16.9
400----	30	7,409	-26.2		263	17.9
350----	30	8,360	-33.5		266	21.2
300----	29	9,427	-40.7		265	28.6
250----	29	10,648	-48.7		269	31.9
200----	29	12,089	-55.9		264	39.4
175----	29	12,935	-58.2		268	39.8
150----	29	13,899	-60.7		271	35.2
125----	29	15,028	-62.9		268	30.1
100----	29	16,396	-64.7		272	23.1
80-----	27	17,760	-64.4		288	17.5
60-----	27	19,530	-61.4		293	11.1
50-----	27	20,666	-60.1		277	6.4
40-----	25	22,060	-58.1		275	10.5
30-----	24	23,893	-54.5		276	14.0
25-----	20	25,084	-52.5		276	15.2
20-----	19	26,544	-50.5		270	19.6
15-----	10	28,459	-47.8			
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EL PASO, TEX. (883 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,197	12.1	63	32	2.3
1,000--	31	128				
950----	31	563				
900----	31	1,027				
850----	31	1,511	15.7	43	315	2.1
800----	31	2,023	12.7	44	280	5.2
750----	31	2,558	8.9	46	251	9.7
700----	31	3,129	5.2	43	249	12.0
650----	31	3,728	1.3	42	241	15.2
600----	31	4,369	- 2.8	39	236	16.5
550----	31	5,046	- 6.8		241	17.1
500----	31	5,791	-11.5		248	19.4
450----	31	6,584	-17.3		249	21.2
400----	31	7,463	-23.8		251	24.9
350----	31	8,424	-31.1		255	30.7
300----	31	9,500	-38.4		252	40.6
250----	31	10,732	-46.6		253	50.1
200----	31	12,182	-55.3		255	57.5
175----	31	13,026	-59.3		256	56.5
150----	31	13,982	-63.2		258	48.2
125----	31	15,095	-66.2		258	36.5
100----	30	16,441	-67.8		265	24.1
80-----	30	17,786	-66.6		272	13.4
60-----	30	19,543	-62.6		280	4.7
50-----	29	20,676	-60.0		265	4.1
40-----	29	22,079	-57.4		265	7.6
30-----	24	23,918	-54.5		269	8.5
25-----	24	25,090	-53.0		264	8.0
20-----	23	26,536	-51.3		265	7.8
15-----	12	28,430	-48.6			
10-----						

ELY, NEV. (810 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,908	1.0	62	181	1.9
1,000--	31	179				
950----	31	602				
900----	31	1,048				
850----	31	1,520				
800----	31	2,013	6.1	51	175	2.5
750----	31	2,537	4.9	47	351	1.9
700----	31	3,102	1.8	49	319	3.5
650----	31	3,688	- 1.7	47	317	5.8
600----	31	4,329	- 5.7	44	303	6.2
550----	31	4,997	- 9.9	40	290	7.2
500----	31	5,736	-14.7	34	286	10.1
450----	31	6,520	-20.3		301	12.0
400----	31	7,389	-27.1	32	292	13.6
350----	31	8,339	-34.3		288	16.7
300----	31	9,402	-42.0		291	15.5
250----	31	10,618	-49.2		297	20.6
200----	31	12,060	-55.9		301	21.8
175----	30	12,912	-58.0		289	24.5
150----	30	13,879	-60.5		283	22.5
125----	29	15,011	-62.8		278	20.2
100----	28	16,382	-63.8		280	16.5
80-----	27	17,748	-63.3		282	9.5
60-----	26	19,517	-61.8		301	6.6
50-----	26	20,648	-60.7		323	5.2
40-----	23	22,044	-59.3		295	5.2
30-----	20	23,845	-56.9		291	9.7
25-----	20	25,003	-55.2		290	9.7
20-----	20	26,433	-53.3		287	14.0
15-----	14	28,299	-51.2		282	22.7
10-----						

FAIRBANKS, ALASKA (987 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	135	- 4.6	84	[illegible]	2.9
1,000--	31	31				
950----	31	437	- 3.8	73	71	5.1
900----	31	861	- 4.8	71	123	5.6
850----	31	1,311	- 5.3	69	153	4.3
800----	31	1,786	- 6.8	62	165	6.4
750----	31	2,286	- 9.2	[illegible]	191	7.4
700----	31	2,819	-12.3	56	200	8.0
650----	31	3,378	-15.6	51	205	8.9
600----	31	3,981	-19.6	47	215	9.7
550----	31	4,617	-23.8	43	216	10.1
500----	31	5,311	-28.5	43	229	9.1
450----	31	6,054	-33.8	43	235	10.9
400----	31	6,875	-39.4		235	11.1
350----	31	7,778	-45.2		236	10.5
300----	31	8,794	-51.0		243	11.5
250----	31	9,972	-53.1		243	11.3
200----	31	11,423	-50.1		252	14.8
175----	31	12,298	-49.1		241	13.6
150----	31	13,311	-48.9		250	14.8
125----	31	14,509	-48.9		251	15.7
100----	31	15,975	-49.1		246	15.7
80-----	31	17,435	-49.6		251	14.4
60-----	30	19,313	-51.1		251	13.0
50-----	28	20,501	-51.6		250	11.7
40-----	28	21,946	-52.4		264	9.3
30-----	26	[illegible]	-52.5		268	6.8
25-----	23	24,981	-51.9		289	6.0
20-----	20	26,426	-51.3		291	7.0
15-----	11	28,263	-51.7			
10-----						

FLINT, MICH. (989 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	234	5.3	89	227	1.9
1,000--	31	142				
950----	31	567	8.3	70	258	4.9
900----	31	1,012	7.0	61	284	8.5
850----	31	1,481	5.0	57	286	10.3
800----	31	1,973	2.4	56	282	11.7
750----	31	2,494	.6	47	279	14.2
700----	31	3,046	- 1.7	49	285	18.5
650----	31	3,631	- 4.2	43	284	21.0
600----	31	4,260	- 7.8	40	288	21.6
550----	31	4,926	-12.0	33	285	24.9
500----	31	5,655	-16.6	34	284	27.2
450----	31	6,434	-21.9	31	284	29.1
400----	31	7,296	-27.9		286	31.9
350----	31	8,243	-34.8		286	37.7
300----	31	9,301	-42.5		277	38.3
250----	31	10,512	-50.4		278	42.6
200----	31	11,947	-56.2		277	45.3
175----	31	12,793	-57.5		281	41.6
150----	31	13,764	-58.6		277	36.3
125----	30	14,906	-60.1		282	35.0
100----	30	16,297	-60.3		279	27.0
80-----	30	17,690	-59.5		282	19.4
60-----	30	19,491	-58.9		282	16.7
50-----	29	20,636	-57.9		282	14.0
40-----	28	22,044	-56.6		278	11.9
30-----	27	23,877	-54.0		267	16.5
25-----	25	25,048	-52.8		264	21.2
20-----	21	26,488	-51.4		265	27.8
15-----	19	28,353	-49.3		266	34.4
10-----	5	30,982	-46.5			

FORT WORTH, TEX. (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	180	17.2	87	217	1.6
1,000--	31	127				
950----	31	569	17.9	77	204	9.3
900----	31	1,029	16.6	68	212	8.2
850----	31	1,515	14.5	60	229	7.2
800----	31	2,026	11.9	51	245	5.8
750----	31	2,562	8.8	43	260	6.6
700----	31	3,131	5.4	39	275	8.4
650----	31	3,730	1.5	40	278	11.9
600----	31	4,373	- 2.6	41	277	14.6
550----	31	5,054	- 7.0	35	278	17.1
500----	31	5,796	-11.5		280	19.4
450----	31	6,594	-16.9		275	25.1
400----	31	7,470	-23.1		272	29.0
350----	31	8,435	-30.3		271	37.1
300----	31	9,514	-38.2		269	42.7
250----	31	10,746	-46.5		267	51.1
200----	31	12,199	-55.1		269	62.4
175----	31	13,044	-59.3		269	61.4
150----	31	14,001	-62.9		270	56.7
125----	31	15,118	-65.5		273	43.9
100----	31	16,467	-67.5		272	26.8
80-----	31	17,814	-66.5		278	15.3
60-----	30	19,577	-61.8		279	6.6
50-----	30	20,712	-59.3		271	6.8
40-----	30	22,121	-55.8		265	9.1
30-----	29	23,970	-53.0		275	11.3
25-----	28	25,154	-51.0		272	11.3
20-----	28	26,613	-49.1		268	9.7
15-----	19	28,535	-46.5		253	8.4
10-----	6	31,183	-45.0			

GLASGOW, MONT. (933 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	696	4.5	61	8	1.0
1,000--	31	127				
950----	31	547				
900----	31	995	8.1	53	278	8.0
850----	31	1,466	6.5	51	285	13.6
800----	31	1,961	4.0	51	289	16.1
750----	31	2,478	.9	52	285	17.9
700----	31	3,035	- 2.2	54	277	18.5
650----	31	3,615	- 5.3	51	277	21.4
600----	31	4,246	- 9.1	53	277	24.5
550----	31	4,909	-12.9	54	279	24.1
500----	31	5,636	-17.1	50	278	22.3
450----	31	6,412	-22.4	46	281	24.9
400----	31	7,275	-28.6	43	287	27.6
350----	31	8,217	-35.9	42	288	29.5
300----	31	9,270	-43.6		290	33.4
250----	31	10,477	-50.9		292	35.0
200----	31	11,910	-56.0		294	34.4
175----	31	12,757	-57.1		290	33.2
150----	31	13,731	-57.9		291	31.5
125----	31	14,878	-59.1		289	25.3
100----	31	16,275	-59.7		293	22.0
80-----	31	17,672	-58.8		303	16.5
60-----	31	19,477	-59.0		307	9.7
50-----	31	20.621	-58.7		317	9.1
40-----	30	22,021	-58.3		329	7.2
30-----	30	23,835	-57.5		343	8.5
25-----	29	24,994	-56.3		1	7.0
20-----	27	26,420	-54.9		347	8.5
15-----	23	28,291	-53.1		318	9.5
10-----	6	30,973	-49.0			

GRAND JUNCTION, COLO. (854 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,474	7.8	60	115	5.4
1,000--	31	146				
950----	31	575				
900----	31	1,032				
850----	31	1,509			120	6.0
800----	31	2,011	8.5	51	139	4.1
750----	31	2,542	5.5	53	201	1.0
700----	31	3,103	2.0	56	254	5.4
650----	31	3,695	- 1.9	55	253	8.9
600----	31	4,329	- 6.0	53	255	9.9
550----	31	4,998	-10.0	45	260	11.5
500----	31	5,736	-14.4	36	267	12.8
450----	31	6,520	-19.9		261	16.7
400----	31	7,389	-26.5		256	20.4
350----	31	8.339	-34.1	35	262	24.9
300----	31	9,399	-42.4		263	24.1
250----	31	10,610	-49.9		275	19.4
200----	31	12,048	-55.5		281	19.2
175----	31	12,894	-57.6		276	23.5
150----	31	13,863	-59.6		278	23.5
125----	30	14,998	-62.2		272	21.8
100----	30	16,372	-63.5		276	18.3
80-----	30	17,744	-63.1		281	13.4
60-----	30	19.520	-61.6		287	9.7
50-----	28	20,653	-60.5		293	9.1
40-----	28	22,050	-58.6		296	6.0
30-----	28	23,868	-56.0		283	9.3
25-----	26	25,026	-54.6		273	12.0
20-----	25	26,460	-52.8		274	17.9
15-----	17	28,342	-50.5		266	24.9
10-----	7	31,026	-48.2			

GREAT FALLS, MONT. (887 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,123	7.0	50	233	8.4
1,000--	31	127				
950----	31	551				
900----	31	1,004				
850----	31	1,478	7.5	47	247	16.9
800----	31	1,974	4.3	51	265	15.9
750----	31	2,490	1.2	53	275	16.1
700----	31	3,050	- 1.6	52	284	18.5
650----	31	3,631	- 5.1	52	284	20.4
600----	31	4,263	- 8.4	47	284	21.0
550----	31	4,925	-12.6	48	284	21.6
500----	31	5,657	-17.1	45	284	21.6
450----	31	6,428	-22.7	47	287	21.4
400----	31	7,296	-28.5	41	284	25.5
350----	31	8,239	-35.3		285	25.6
300----	31	9,296	-42.9		289	28.0
250----	31	10,506	-50.2		289	30.7
200----	31	11,943	-55.8		297	30.7
175----	31	12,790	-57.4		292	31.5
150----	31	13,762	-58.0		286	29.1
125----	31	14,907	-59.2		292	24.3
100----	31	16,302	-59.5		290	21.0
80-----	31	17,697	-59.5		292	14.8
60-----	31	19,497	-59.2		301	8.5
50-----	31	20,640	-59.1		311	8.0
40-----	29	22,044	-58.1		328	6.8
30-----	27	23,850	-57.0		344	8.0
25-----	23	25,008	-56.1		336	8.0
20-----	23	26,430	-55.0		334	8.7
15-----	19	28,295	-53.4		317	6.8
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

OCTOBER 1960

GREEN BAY, WIS. (990 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	210	5.0	91	279	3.1
1,000	31	129				
950	31	550	7.9	70	285	7.0
900	31	996	6.1	65	285	9.5
850	31	1,463	4.2	60	284	12.0
800	31	1,954	2.3	53	286	13.4
750	31	2,473	.4	44	291	15.7
700	31	3,026	-2.0	38	295	18.7
650	31	3,605	-5.1	38	294	22.0
600	31	4,237	-8.2	37	290	25.8
550	31	4,901	-12.1	37	290	26.0
500	31	5,631	-16.6	36	289	29.3
450	31	6,411	-21.9	34	287	33.0
400	31	7,273	-28.2		286	36.3
350	31	8,217	-35.2		284	39.4
300	31	9,274	-42.8		285	41.8
250	31	10,482	-50.7		288	45.3
200	31	11,916	-55.8		285	48.2
175	31	12,764	-57.1		287	45.1
150	31	13,737	-58.3		288	40.0
125	30	14,888	-59.5		288	33.2
100	30	16,283	-59.7		287	28.4
80	30	17,680	-59.1		289	23.7
60	28	19,491	-58.2		289	15.0
50	28	20,639	-57.6		291	13.6
40	27	22,059	-56.3		292	11.1
30	25	23,897	-54.5		278	12.8
25	23	25,082	-53.3		281	12.6
20	17	26,505	-51.7		282	17.5
15	10	28,432	-48.7			
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GREENSBORO, N. C. (986 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	273	11.0	93	46	1.9
1,000	31	152				
950	31	585	13.4	72	9	2.7
900	31	1,039	12.1	66	294	4.3
850	31	1,517	10.1	65	275	8.5
800	31	2,019	7.8	57	279	11.1
750	31	2,552	5.3	51	285	13.6
700	31	3,111	2.4	48	278	15.2
650	31	3,703	-.8	44	272	16.5
600	31	4,342	-4.5	42	272	17.5
550	31	5,015	-8.6	39	274	19.4
500	31	5,755	-13.1		275	21.6
450	31	6,544	-18.6	36	275	23.1
400	31	7,418	-24.8		274	27.0
350	31	8,377	-31.7		272	31.7
300	31	9,449	-39.6		277	32.1
250	31	10,673	-48.0		275	40.2
200	31	12,117	-56.0		276	48.8
175	31	12,960	-58.9		276	44.5
150	31	13,923	-60.7		275	41.4
125	31	15,051	-63.1		276	35.0
100	31	16,418	-64.2		276	26.8
80	30	17,783	-63.4		273	20.2
60	30	19,567	-59.6		266	11.7
50	30	20,714	-57.5		269	13.2
40	29	22,133	55.0		270	12.0
30	28	23,983	-51.7		258	12.6
25	25	25,170	-49.8		262	13.6
20	22	26,635	-48.4		259	15.2
15	20	28,532	-46.6		260	17.1
10	11	31,192	-44.4			

HILO, HAWAII (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	11	21.0	88	231	6.2
1,000	31	137	22.8	79	231	4.3
950	31	585	20.1	81	125	4.1
900	31	1,049	17.1	83	101	5.8
850	31	1,537	14.6	79	100	6.2
800	31	2,049	12.9	65	96	7.0
750	31	2,590	10.9	54	81	5.4
700	31	3,165	8.4	46	73	3.7
650	31	3,772	5.8	33	79	2.9
600	30	4,426	2.1	29	37	1.2
550	30	5,118	-2.2	31	34	.8
500	30	5,876	-6.8	28	230	.6
450	30	6,685	-12.4	27	276	3.1
400	30	7,581	-19.2	28	281	4.7
350	30	8,561	-26.3		279	10.5
300	30	9,657	-34.8		277	16.9
250	30	10,904	-44.6		270	21.6
200	30	12,360	-56.2		266	26.4
175	30	13,197	-62.3		266	29.3
150	30	14,137	-67.3		271	25.5
125	26	15,222	-71.6		278	15.9
100	21	16,527	-72.2		295	3.9
80	21	17,842	-71.1		83	8.7
60	20	19,566	-65.3		88	12.4
50	20	20,685	-62.1		83	16.7
40	20	22,075	-58.9		87	19.8
30	18	23,900	-55.3		86	21.0
25	16	25,074	-54.0		87	21.8
20	12	26,538	-51.8		87	20.0
15	8	28,413	-49.7			
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INTERNAT. FALLS, MINN. (971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	360	3.4	78	230	2.1
1,000	31	116				
950	31	535	5.2	71	234	6.0
900	31	977	5.1	62	261	12.2
850	31	1,442	3.7	61	274	12.6
800	31	1,933	1.5	57	276	14.6
750	31	2,448	-.7	52	281	17.9
700	31	3,000	-3.5	51	281	22.7
650	31	3,577	-6.6	47	284	24.9
600	31	4,204	-10.1	44	282	24.5
550	31	4,862	-13.9	41	282	25.3
500	31	5,589	-18.7	42	281	28.2
450	31	6,359	-24.1	41	279	31.5
400	31	7,217	-30.1	42	277	32.8
350	31	8,154	-36.9		275	39.6
300	31	9,203	-44.3		275	42.4
250	31	10,406	-50.9		280	43.5
200	31	11,846	-54.1		283	44.7
175	31	12,700	-55.1		285	40.8
150	31	13,682	-56.3		286	36.9
125	31	14,837	-57.7		290	31.7
100	31	16,241	-58.9		295	25.8
80	30	17,647	-58.0		298	19.2
60	30	19,459	-57.8		302	13.4
50	30	20,610	-57.8		306	13.4
40	27	22,011	-57.4		305	12.8
30	25	23,836	-56.6		307	12.4
25	23	24,993	-56.0		299	12.6
20	17	26,432	-54.2		298	15.5
15	10	28,279	-52.3			
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JACKASS FLATS, NEV. (891 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,100	11.1	40	39	4.9
1,000	31	125				
950	31	559				
900	31	1,017				
850	31	1,500	14.5	31	101	2.5
800	31	2,009	11.1	33	175	3.1
750	31	2,538	7.5	34	214	1.4
700	31	3,109	3.6	36	293	1.6
650	31	3,700	.0	39	305	3.9
600	31	4,344	-4.1	38	295	6.6
550	31	5,016	-8.3	31	311	6.6
500	31	5,759	-13.3		318	9.3
450	31	6,542	-19.0		305	10.9
400	31	7,421	-25.6		299	13.8
350	31	8,375	-32.6		299	15.2
300	31	9,442	-40.3		305	17.5
250	31	10,665	-47.9		303	18.1
200	31	12,114	-54.7		301	19.2
175	31	12,962	-57.3		292	21.2
150	30	13,937	-60.0		282	22.9
125	29	15,069	-62.8		277	18.3
100	28	16,433	-64.9		281	16.7
80	28	17,797	-63.7		280	10.9
60	26	19,570	-61.5		284	6.4
50	24	20,704	-60.5		286	7.4
40	20	22,098	-58.3		300	7.6
30	17	23,927	-55.7		275	9.7
25	14	25,096	-54.0		269	14.8
20	12	26,516	-52.4			
15	7	28,379	-51.2			
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JACKSON, MISS. (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	101	14.4	92		0.0
1,000	31	131	15.3	85	121	.6
950	31	567	17.0	71	187	3.5
900	31	1,030	14.8	67	212	2.7
850	31	1,512	12.2	63	253	4.7
800	31	2,019	9.8	57	268	5.8
750	31	2,554	7.3	47	278	7.6
700	31	3,119	4.4	40	277	8.4
650	31	3,717	1.2	36	279	12.0
600	31	4,359	-2.3	34	278	16.5
550	31	5,040	-6.0		278	18.1
500	31	5,786	-11.0		278	22.0
450	31	6,582	-16.4		274	24.9
400	31	7,464	-22.7		272	29.1
350	31	8,430	-29.7		274	34.8
300	31	9,512	-37.5		271	39.4
250	31	10,748	-46.2		274	47.2
200	31	12,203	-54.8		277	56.7
175	31	13,047	-59.3		278	58.1
150	31	14,005	-63.0		281	50.3
125	30	15,121	-65.6		283	38.3
100	30	16,472	-67.7		281	24.3
80	30	17,817	-66.4		288	14.8
60	30	19,578	-61.9		285	6.6
50	30	20,717	-58.4		276	7.0
40	30	22,129	-56.1		271	8.0
30	29	23,975	-52.3		286	6.8
25	28	25,158	-50.8		278	6.4
20	26	26,616	-48.9		265	6.4
15	21	28,504	-46.8		264	8.0
10	7	31,222	-44.3			

JACKSONVILLE, FLA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	18.0	96	333	2.9
1,000	31	138	20.4	81	12	2.1
950	31	579	18.9	70	177	.8
900	31	1,044	16.1	66	235	2.7
850	31	1,528	13.3	59	249	4.7
800	31	2,037	10.8	50	263	6.8
750	31	2,569	7.8	49	264	8.9
700	31	3,139	4.8	44	267	11.9
650	31	3,738	2.1	36	266	15.0
600	30	4,384	-1.3		272	17.5
550	30	5,063	-5.5		273	22.0
500	30	5,813	-10.3		272	25.5
450	30	6,610	-15.4		273	29.1
400	30	7,498	-21.3		270	31.9
350	30	8,470	-28.1		271	36.9
300	30	9,558	-36.2		273	41.2
250	30	10,798	-45.6		280	52.8
200	30	12,252	-55.6		283	56.2
175	30	13,094	-60.0		281	55.4
150	30	14,047	-64.5		283	47.4
125	30	15,151	-68.0		279	37.5
100	30	16,487	-69.2		282	25.1
80	30	17,827	-66.2		289	12.4
60	29	19,593	-60.5		253	3.7
50	29	20,737	-57.9		248	3.3
40	29	22,155	-54.7		318	1.7
30	29	24,006	-52.3		108	3.3
25	29	25,191	-50.4		107	3.5
20	25	26,652	-47.8		116	3.9
15	11	28,552	-45.4			
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JOHNSTON IS., PACIFIC AREA (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	3	26.5	80	77	10.1
1,000	31	118	25.7	78	84	11.7
950	31	569	22.5	78	90	12.0
900	31	1,039	19.6	76	93	12.2
850	31	1,530	16.6	73	96	10.1
800	31	2,046	14.2	62	97	8.7
750	31	2,583	11.8	48	89	6.8
700	31	3,164	8.7	43	104	5.2
650	31	3,766	5.3	37	90	9.5
600	31	4,424	1.9		101	3.9
550	31	5,114	-2.2		101	3.7
500	31	5,872	-6.6		142	2.1
450	31	6,681	-11.8		195	4.5
400	31	7,581	-18.1		226	7.4
350	31	8,565	-25.1		242	10.3
300	31	9,668	-33.2		259	14.4
250	31	10,923	-43.3		265	20.8
200	31	12,387	-55.5		269	32.1
175	31	13,226	-61.9		267	36.7
150	31	14,166	-68.2		267	36.3
125	31	15,247	-73.4		266	27.2
100	30	16,548	-74.0		256	8.4
80	28	17,861	-71.1		93	8.9
60	27	19,587	-64.7		89	18.5
50	27	20,710	-61.1		91	22.0
40	25	22,109	-57.8		92	26.2
30	24	23,942	-53.8		92	32.1
25	22	25,119	-51.7		92	29.7
20	19	26,592	-49.5		86	29.1
15	7	28,517	-44.4			
10						

KING SALMON, ALASKA (997 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	15	0.8	86	358	1.4
1,000	31	-11			308	4.7
950	31	406	.7	72	34	2.7
900	31	836	-1.2	69	47	2.1
850	31	1,290	-3.2	65	243	3.3
800	31	1,768	-5.5	60	257	2.9
750	31	2,272	-8.1	57	224	4.1
700	31	2,806	-11.3	51	230	3.5
650	31	3,379	-14.7	47	242	2.7
600	31	3,973	-18.4	45	252	4.5
550	30	4,607	-22.4	46	251	3.9
500	30	5,306	-26.7	45	237	4.9
450	30	6,052	-31.9	43	245	6.0
400	30	6,882	-37.5		281	4.9
350	30	7,793	-43.4		266	8.0
300	30	8,818	-48.1		271	11.9
250	30	10,016	-49.2		263	15.5
200	30	11,484	-47.8		256	19.8
175	30	12,366	-47.8		259	20.2
150	30	13,383	-47.9		251	19.4
125	29	14,585	-48.5		250	17.3
100	29	16,051	-49.4		252	16.5
80	28	17,512	-50.1		253	16.3
60	25	19,381	-51.8		263	12.4
50	24	20,563	-52.5		260	9.3
40	24	22,004	-52.7		261	6.4
30	24	23,863	-51.8		298	3.3
25	23	25,042	-51.5		308	2.7
20	23	26,491	-51.1		342	2.7
15	14	28,387	-50.3		12	4.5
10						

KOTZEBUE, ALASKA (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	-6.0	79	79	6.0
1,000	30	24			66	3.9
950	30	426	-5.7	68	97	8.0
900	30	849	-7.5	67	112	6.0
850	30	1,294	-8.5	58	118	6.6
800	30	1,763	-9.9	51	143	4.1
750	30	2,260	-11.5	51	172	3.9
700	30	2,787	-13.9	49	185	4.3
650	30	3,342	-16.8	46	218	4.9
600	30	3,945	-20.3	51	212	5.4
550	30	4,579	-24.3	49	217	7.8
500	30	5,273	-29.2	48	223	12.6
450	30	6,013	-34.3	46	224	14.2
400	30	6,835	-39.5		223	17.3
350	30	7,737	-45.1		230	16.1
300	30	8,753	-50.8		234	18.5
250	30	9,932	-53.7		232	21.6
200	27	11,366	-50.7		232	17.7
175	27	12,239	-49.4		237	20.4
150	27	13,251	-48.9		234	21.4
125	27	14,449	-48.7		235	21.8
100	26	15,914	-48.7		234	22.7
80	23	17,378	-49.2		240	23.1
60	23	19,259	-50.2		244	21.8
50	22	20,452	-50.6		239	20.6
40	20	21,904	-50.7		248	20.0
30	19	23,778	-51.1		250	18.3
25	19	24,960	-50.9		251	19.0
20	16	26,430	-50.6		250	22.3
15	10	28,329	-49.6			
10	6	31,004	-48.3			

LAKE CHARLES, LA. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	17.4	94	37	3.5
1,000	31	129	19.3	83	73	5.1
950	31	570	18.1	75	157	4.7
900	31	1,035	16.2	68	191	2.7
850	31	1,520	14.0	60	234	3.3
800	31	2,030	11.5	51	263	4.5
750	31	2,569	8.9	44	276	6.4
700	31	3,137	6.0	40	276	9.5
650	31	3,741	2.8	36	284	12.0
600	31	4,386	-.8		269	15.0
550	31	5,072	-4.8		272	18.1
500	31	5,821	-9.7		275	19.2
450	31	6,627	-15.2		276	24.3
400	31	7,509	-21.3		276	32.1
350	31	8,481	-28.1		273	37.9
300	31	9,571	-36.0		274	47.0
250	31	10,814	-45.0		273	56.3
200	31	12,274	-54.8		274	64.5
175	31	13,118	-60.1		275	65.5
150	31	14,070	-64.7		275	55.2
125	30	15,177	-68.0		278	42.7
100	29	16,512	-69.7		276	23.5
80	29	17,845	-68.2		287	14.2
60	29	19,602	-62.1		274	2.1
50	28	20,742	-58.7		252	5.4
40	28	22,153	-56.1		282	6.0
30	27	24,002	-52.2		281	1.4
25	23	25,193	-50.2		297	1.0
20	21	26,652	-49.6		244	.8
15	16	28,548	-46.4		228	1.4
10	10	31,275	-43.2			

LANDER, WYO. (830 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,696	4.2	65	240	1.4
1,000	31	145				
950	31	573				
900	31	1,022				
850	31	1,498				
800	31	1,995	6.8	44	210	1.7
750	31	2,520	4.4	39	276	5.4
700	31	3,081	.8	42	282	8.2
650	31	3,665	-3.0	42	280	13.4
600	31	4,302	-6.7	37	276	16.9
550	31	4,967	-11.3	36	266	18.1
500	31	5,702	-15.9	36	267	20.0
450	31	6,479	-21.0		268	19.0
400	31	7,349	-27.4		267	20.2
350	31	8,296	-34.6		274	21.2
300	31	9,355	-42.8		271	21.2
250	31	10,565	-50.3		272	22.3
200	29	11,997	-56.9		281	21.2
175	29	12,840	-58.7		282	21.2
150	29	13,807	-59.5		277	22.0
125	29	14,943	-61.5		279	19.8
100	29	16,323	-62.1		286	15.5
80	29	17,702	-61.9		293	15.2
60	27	19,478	-60.9		306	10.5
50	25	20,611	-60.3		301	8.5
40	23	22,012	-58.9		308	8.2
30	19	23,822	-57.2		304	8.7
25	18	24,981	-55.9		299	10.1
20	13	26,417	-53.7		288	12.8
15	6	28,240	-51.9			
10						

LAS VEGAS, NEV. (938 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	660	14.0	43	250	3.7
1,000	31	111				
950	31	548				
900	31	1,010	17.6	33	333	2.9
850	31	1,496	14.7	34	301	3.3
800	31	2,005	11.1	37	311	4.1
750	31	2,535	7.3	38	317	2.5
700	31	3,105	3.4	39	294	1.9
650	31	3,696	-.3	37	276	3.5
600	31	4,338	-4.0	34	295	4.7
550	31	5,011	-8.2	32	293	6.6
500	31	5,753	-13.3	33	298	8.4
450	31	6,539	-19.0		290	10.1
400	31	7,413	-25.3		288	14.0
350	31	8,369	-32.5		288	15.3
300	31	9,437	-40.6		292	16.7
250	31	10,658	-48.3		288	17.1
200	30	12,101	-54.7		284	23.1
175	30	12,950	-57.3		284	26.6
150	30	13,918	-60.4		283	22.3
125	30	15,046	-62.8		278	19.8
100	29	16,418	-64.8		285	17.5
80	28	17,783	-64.4		291	12.4
60	27	19,551	-61.7		304	7.2
50	27	20,684	-60.1		293	7.6
40	27	22,081	-58.4		288	7.8
30	27	23,903	-54.9		276	10.7
25	25	25,069	-53.3		271	14.6
20	25	26,513	-51.0		269	18.8
15	16	28,350	-50.1		267	23.7
10						

LIHUE, HAWAII (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	36	23.6	83	55	4.3
1,000	31	140	23.4	82	60	6.2
950	31	588	20.3	83	82	9.7
900	31	1,053	16.9	84	87	10.1
850	31	1,539	14.2	83	91	9.7
800	31	2,051	12.1	69	100	8.5
750	31	2,592	10.1	50	97	6.4
700	31	3,163	8.0	34	99	3.5
650	31	3,770	4.7	33	145	.6
600	31	4,421	1.1	31	211	.8
550	31	5,111	-3.1	31	275	1.7
500	31	5,865	-7.7		267	3.3
450	31	6,676	-13.2		279	4.3
400	31	7,565	-19.4		270	6.2
350	31	8,544	-26.5		274	10.1
300	31	9,640	-35.0		277	14.8
250	31	10,885	-45.0		272	18.3
200	30	12,337	-56.4		268	22.9
175	30	13,174	-62.3		274	22.9
150	30	14,114	-67.3		277	16.9
125	27	15,207	-70.8		299	10.5
100	21	16,530	-71.3		312	4.1
80	19	17,854	-69.4		77	6.4
60	19	19,594	-63.9		88	14.2
50	19	20,722	-60.1		91	14.2
40	19	22,125	-56.8		90	15.0
30	17	23,948	-54.0		92	14.6
25	16	25,123	-52.3		86	13.6
20	15	26,577	-50.4		85	15.3
15	12	28,464	-46.9		94	14.8
10						

LITTLE ROCK, ARK. (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	79	13.1	93	318	0.6
1,000	31	132	14.7	89		.0
950	31	569	15.9	72	211	2.5
900	31	1,028	13.9	69	256	4.7
850	31	1,509	11.5	68	282	6.2
800	31	2,015	9.6	59	299	9.1
750	31	2,546	7.1	50	276	8.2
700	31	3,114	3.6	47	278	9.3
650	31	3,709	.3	41	285	11.5
600	31	4,351	-3.5	36	277	13.8
550	31	5,026	-7.7	37	284	13.4
500	31	5,770	-12.7	37	276	16.1
450	31	6,560	-18.1	36	279	17.7
400	31	7,438	-24.3		272	22.5
350	31	8,399	-31.1		276	26.4
300	31	9,474	-39.0		274	28.4
250	31	10,703	-47.4		273	36.7
200	31	12,151	-55.5		273	37.9
175	31	12,996	-58.8		275	41.8
150	31	13,957	-61.2		280	36.7
125	31	15,082	-64.0		275	26.8
100	31	16,440	-66.3		277	23.7
80	31	17,793	-64.9		286	15.7
60	31	19,560	-61.6		291	10.5
50	31	20,694	-59.2		298	7.8
40	31	22,104	-56.1		276	10.3
30	30	23,948	-52.5		276	13.0
25	29	25,133	-50.5		290	9.7
20	26	26,592	-49.2		266	12.4
15	25	28,478	-47.2		264	17.3
10	5	31,105	-45.4			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

McGRATH, ALASKA
(990 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	103	- 4.8	84	351	1.6
1,000--	30	20				
950----	30	426	- 4.8	76	66	2.7
900----	30	850	- 5.4	74	95	5.1
850----	30	1,300	- 5.5	64	119	3.5
800----	30	1,775	- 6.5	56	166	2.9
750----	30	2,281	- 8.7	49	168	4.9
700----	30	2,810	-11.7	47	182	7.0
650----	30	3,371	-15.2	46	197	7.4
600----	30	3,975	-19.0	40	201	5.4
550----	30	4,616	-22.8	38	212	4.7
500----	30	5,312	-27.4	38	223	4.7
450----	30	6,056	-32.8	40	211	7.8
400----	30	6,882	-38.7		222	7.6
350----	30	7,788	-44.7		225	7.8
300----	30	8,806	-50.5		245	7.2
250----	30	9,986	-52.7		260	10.9
200----	30	11,439	-49.1		237	11.3
175----	30	12,317	-48.8		236	13.2
150----	30	13,332	-48.6		241	13.8
125----	30	14,531	-48.7		236	15.3
100----	30	15,999	-48.7		243	16.1
80-----	29	17,465	-49.4		248	16.1
60-----	29	19,345	-50.8		250	15.0
50-----	29	20,531	-51.3		250	13.2
40-----	28	21,978	-51.7		255	8.0
30-----	27	23,846	-51.5		258	9.5
25-----	26	25,029	-51.1		258	7.6
20-----	23	26,484	-50.5		272	2.1
15-----	11	28,367	-49.3			
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MEDFORD, OREG.
(971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	401	6.7	87	283	0.8
1,000--	31	160				
950----	31	589	9.7	72	301	2.1
900----	31	1,036	10.8	61	155	1.7
850----	31	1,512	9.3	56	182	4.1
800----	31	2,013	6.9	49	215	5.2
750----	31	2,539	4.2	42	242	6.6
700----	31	3,099	1.3	42	266	8.7
650----	31	3,691	- 1.8	37	276	10.9
600----	31	4,326	- 5.2	31	284	11.7
550----	31	4,995	- 9.4	35	282	15.3
500----	31	5,735	-14.0	33	280	18.7
450----	31	6,519	-19.4	31	278	21.0
400----	31	7,394	-25.5		286	22.0
350----	31	8,351	-32.3		296	26.2
300----	31	9,421	-40.3		308	32.3
250----	31	10,641	-49.5		312	33.8
200----	31	12,076	-57.7		303	32.1
175----	31	12,914	-60.2		299	31.3
150----	31	13,872	-61.7		299	29.7
125----	31	15,000	-62.7		294	22.9
100----	31	16,375	-62.8		286	17.5
80-----	31	17,750	-62.1		295	12.6
60-----	30	19,533	-60.8		313	7.0
50-----	30	20,669	-60.2		307	5.6
40-----	29	22,062	-58.8		322	4.9
30-----	26	23,880	-56.5		312	5.4
25-----	25	25,045	-55.6		323	5.6
20-----	23	26,472	-54.1		296	6.8
15-----	18	28,318	-51.7		301	10.1
10-----						

MERIDA, MEXICO
(1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	11	21.5	97	82	4.1
1,000--	31	113	23.8	87	94	6.8
950----	31	562	22.8	78	115	10.7
900----	31	1,034	20.4	74	117	9.3
850----	31	1,527	18.0	68	122	7.0
800----	31	2,045	15.3	63	118	4.3
750----	31	2,589	12.6	55	109	4.3
700----	31	3,167	9.5	52	125	2.7
650----	31	3,775	6.2	51	118	1.7
600----	31	4,432	2.5	49	108	.6
550----	31	5,121	- 1.7	45	353	1.7
500----	31	5,883	- 6.2	43	350	1.0
450----	31	6,696	-11.2	39	315	3.3
400----	31	7,596	-16.8	32	302	6.0
350----	31	8,586	-23.6		294	8.9
300----	31	9,694	-31.8		295	12.0
250----	31	10,956	-42.0		291	16.5
200----	31	12,427	-54.2		291	20.0
175----	31	13,270	-61.1		292	21.8
150----	31	14,211	-68.1		296	19.6
125----	31	15,286	-74.7		299	15.3
100----	31	16,573	-76.5		328	7.2
80-----	30	17,876	-70.3		57	7.8
60-----	28	19,615	-63.1		89	13.0
50-----	28	20,745	-59.5		94	16.3
40-----	27	22,158	-55.6		81	16.5
30-----	24	24,013	-51.9		85	23.7
25-----	22	25,203	-49.6		88	24.9
20-----	21	26,667	-47.9		91	22.5
15-----	15	28,575	-45.5			
10-----						

MIAMI, FLA.
(1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	23.5	89	18	2.5
1,000--	31	123	24.0	81	52	3.5
950----	31	571	21.6	77	108	5.1
900----	31	1,040	18.3	77	137	3.9
850----	31	1,529	15.3	73	187	2.3
800----	31	2,041	12.4	69	223	4.1
750----	31	2,585	9.6	61	239	6.2
700----	31	3,152	7.0	53	248	7.6
650----	31	3,758	4.0	43	257	9.5
600----	31	4,406	.6	37	262	11.7
550----	31	5,094	- 3.6	33	273	13.8
500----	31	5,847	- 8.5	34	276	15.5
450----	31	6,655	-13.6	33	280	19.0
400----	31	7,546	-19.4		280	22.3
350----	31	8,525	-26.4		281	26.0
300----	31	9,622	-34.6		286	29.7
250----	31	10,870	-44.6		289	36.7
200----	30	12,326	-56.1		294	42.2
175----	30	13,164	-62.1		296	41.8
150----	30	14,103	-67.9		289	36.9
125----	30	15,188	-71.7		288	31.3
100----	30	16,498	-72.6		298	16.9
80-----	30	17,816	-68.9		335	3.7
60-----	30	19,562	-62.9		115	4.3
50-----	30	20,694	-59.4		103	5.2
40-----	30	22,102	-56.3		76	9.5
30-----	27	23,943	-53.0		91	13.0
25-----	26	25,122	-50.8		92	12.6
20-----	25	26,587	-48.6		99	10.9
15-----	15	28,490	-45.8		90	12.2
10-----	5	31,206	-40.9			

MIDLAND, TEX.
(915 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	871	13.7	79	103	2.1
1,000--	30	115				
950----	30	554				
900----	30	1,013	16.3	69	149	4.3
850----	30	1,499	15.4	59	198	12.6
800----	30	2,012	13.4	47	215	8.9
750----	30	2,551	10.2	43	245	8.9
700----	30	3,124	6.5	43	260	9.7
650----	30	3,725	2.2	42	248	11.9
600----	30	4,368	- 2.4	43	251	15.3
550----	30	5,047	- 6.6		249	18.8
500----	30	5,793	-11.1		252	21.6
450----	30	6,589	-16.6		254	25.8
400----	30	7,470	-22.8		259	30.3
350----	30	8,435	-29.9		260	35.4
300----	30	9,516	-37.6		258	44.5
250----	30	10,751	-46.1		262	53.2
200----	30	12,205	-55.1		260	65.1
175----	30	13,049	-59.4		262	64.1
150----	30	14,005	-63.5		264	57.3
125----	30	15,116	-66.6		265	42.2
100----	30	16,460	-68.1		272	24.5
80-----	30	17,803	-66.6		274	13.2
60-----	28	19,566	-62.4		294	4.1
50-----	28	20,696	-60.0		312	2.7
40-----	26	22,096	-57.1		270	4.9
30-----	25	23,930	-53.6		268	9.1
25-----	25	25,107	-51.8		266	9.7
20-----	21	26,566	-49.8		254	9.5
15-----	17	28,453	-47.9		260	9.7
10-----	5	31,115	-45.0			

MONTGOMERY, ALA.
(1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	61	14.9	87	359	1.9
1,000--	31	138	16.6	81	33	2.1
950----	31	580	17.6	68	139	2.3
900----	31	1,039	14.9	64	234	3.1
850----	31	1,522	12.6	62	244	5.1
800----	31	2,029	10.0	55	252	5.2
750----	31	2,563	6.7	51	245	10.3
700----	31	3,128	4.1	45	259	8.5
650----	31	3,726	1.2	41	261	11.1
600----	31	4,368	- 2.5	35	266	14.2
550----	31	5,044	- 6.4		269	19.4
500----	31	5,794	-11.1		271	23.5
450----	31	6,588	-16.5		271	27.6
400----	31	7,472	-22.5		271	32.8
350----	31	8,439	-29.0		271	38.9
300----	31	9,524	-37.0		271	45.7
250----	31	10,761	-45.9		274	56.0
200----	31	12,215	-55.6		276	59.5
175----	31	13,058	-59.9		276	58.5
150----	31	14,013	-63.4		276	54.6
125----	29	15,127	-66.3		277	38.7
100----	29	16,473	-68.0		277	25.3
80-----	29	17,814	-66.7		279	16.1
60-----	29	19,571	-62.2		282	8.7
50-----	29	20,707	-58.8		278	6.8
40-----	28	22,116	-56.1		272	6.8
30-----	27	23,962	-52.4		270	8.5
25-----	25	25,139	-51.0		255	5.8
20-----	25	26,596	-49.0		260	6.0
15-----	24	28,495	-46.8		270	8.7
10-----	18	31,182	-44.6			

NANTUCKET, MASS.
(1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	14	10.3	83	339	1.4
1,000--	31	126	11.9	73	334	3.3
950----	31	551	9.7	66	293	6.0
900----	31	1,002	7.3	63	298	6.4
850----	31	1,471	5.4	54	269	11.5
800----	31	1,966	4.5	42	278	15.0
750----	31	2,489	3.1	37	280	18.7
700----	31	3,047	.5	41	275	21.6
650----	31	3,634	- 2.5	39	270	23.9
600----	31	4,271	- 5.7	34	267	28.6
550----	31	4,939	- 9.7	30	268	28.6
500----	31	5,678	-14.4	31	267	29.1
450----	31	6,458	-20.0		268	33.0
400----	31	7,332	-26.5		264	34.6
350----	31	8,279	-33.8		260	35.2
300----	31	9,345	-42.0		255	35.4
250----	31	10,556	-50.5		256	42.4
200----	30	11,986	-56.7		257	44.3
175----	30	12,830	-57.9		258	40.2
150----	30	13,801	-58.9		257	39.2
125----	30	14,943	-59.9		260	32.3
100----	30	16,336	-59.7		258	28.8
80-----	30	17,732	-59.1		259	23.5
60-----	30	19,540	-57.8		255	16.7
50-----	30	20,694	-56.7		263	14.6
40-----	28	22,120	-55.3		255	14.8
30-----	24	23,968	-52.8		261	17.7
25-----	22	25,145	-51.3		262	20.8
20-----	21	26,600	-49.9		261	24.3
15-----	16	28,467	-48.9		260	28.2
10-----	5	31,144	-47.4			

NASHVILLE, TENN.
(995 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	177	11.6	94	241	0.6
1,000--	31	139				
950----	31	566	14.2	72	259	4.1
900----	31	1,027	12.2	70	257	5.4
850----	31	1,504	9.9	66	266	7.6
800----	31	2,006	7.8	58	269	9.1
750----	31	2,532	5.1	51	278	11.1
700----	31	3,097	2.1	46	271	13.0
650----	31	3,685	- 1.0	44	270	14.4
600----	31	4,326	- 4.6	44	276	17.3
550----	31	4,998	- 8.8	45	281	23.9
500----	31	5,739	-13.4	42	282	21.0
450----	31	6,525	-18.9	37	285	23.1
400----	31	7,401	-25.0	37	284	25.8
350----	31	8,358	-32.3		284	31.3
300----	31	9,429	-40.1		283	35.6
250----	30	10,653	-48.9		275	46.0
200----	30	12,092	-56.5		276	51.3
175----	30	12,934	-59.4		281	46.8
150----	30	13,895	-61.4		279	44.5
125----	29	15,022	-63.8		278	36.5
100----	29	16,385	-65.0		280	30.1
80-----	29	17,744	-64.9		278	20.8
60-----	29	19,514	-61.1		279	12.8
50-----	29	20,653	-58.6		270	11.7
40-----	28	22,058	-56.7		271	12.6
30-----	24	23,894	-53.2		264	18.5
25-----	21	25,089	-51.2		265	17.9
20-----	18	26,543	-49.3		263	21.2
15-----	13	28,412	-47.3		277	30.9
10-----	6	31,139	-45.3			

N. Y. INT. AP, IDLEWILD
(1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	11.3	76	318	4.3
1,000--	31	134	11.7	68	324	5.8
950----	31	563	9.7	61	325	5.1
900----	31	1,009	7.8	58	305	6.6
850----	31	1,479	6.2	52	294	10.3
800----	31	1,975	4.6	44	288	15.0
750----	31	2,498	2.7	41	283	18.1
700----	31	3,054	.1	43	275	19.6
650----	31	3,646	- 3.0	44	273	22.0
600----	31	4,275	- 6.3	40	271	24.3
550----	31	4,947	-10.5	38	269	27.4
500----	31	5,677	-15.3	36	271	29.7
450----	31	6,457	-20.6	34	269	31.7
400----	31	7,327	-26.7	35	270	33.2
350----	31	8,277	-34.0		270	35.0
300----	31	9,339	-41.9		267	37.9
250----	31	10,551	-50.2		269	41.0
200----	31	11,985	-56.6		274	45.7
175----	30	12,826	-58.1		273	44.5
150----	30	13,796	-59.2		269	43.1
125----	30	14,935	-60.2		271	38.3
100----	29	16,323	-60.4		268	31.5
80-----	29	17,717	-59.7		272	24.7
60-----	29	19,522	-58.4		267	16.1
50-----	29	20,672	-57.4		265	15.3
40-----	29	22,087	-55.8		266	16.9
30-----	29	23,931	-53.3		268	16.1
25-----	28	25,110	-52.0		270	18.3
20-----	25	26,569	-49.7		269	21.2
15-----	18	28,490	-46.8		269	30.1
10-----	5	31,152	-45.7			

NOME, ALASKA
(1000 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	- 3.4	75	352	1.2
1,000--	31	7			282	1.4
950----	31	416	- 3.6	66	18	1.4
900----	31	839	- 5.6	65	208	.6
850----	31	1,286	- 7.1	59	219	.6
800----	31	1,758	- 8.8	52	283	1.7
750----	31	2,255	-10.7	46	239	5.1
700----	31	2,785	-13.0	42	241	5.6
650----	31	3,344	-16.2	45	236	6.8
600----	31	3,945	-19.8	46	233	7.2
550----	31	4,583	-23.6	47	243	8.4
500----	31	5,277	-28.1	46	241	10.3
450----	31	6,023	-33.1	46	227	10.5
400----	31	6,846	-38.5	50	234	12.6
350----	31	7,752	-44.5		244	13.2
300----	31	8,770	-50.7		232	13.0
250----	31	9,947	-53.6		240	14.8
200----	31	11,394	-50.3		239	12.0
175----	31	12,268	-49.3		239	13.6
150----	31	13,281	-48.5		248	17.1
125----	31	14,480	-48.9		246	15.7
100----	31	15,946	-48.8		239	18.5
80-----	30	17,414	-49.4		244	18.7
60-----	30	19,298	-50.3		246	18.7
50-----	30	20,488	-50.5		240	17.3
40-----	30	21,940	-51.4		245	14.4
30-----	30	23,810	-51.0		253	13.4
25-----	30	24,997	-50.6		249	9.1
20-----	28	26,451	-49.3		251	7.8
15-----	21	28,334	-48.3		267	5.8
10-----						

NORFOLK, VA.
(1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	9	13.5	78	356	2.3
1,000--	31	146	15.2	73	355	3.7
950----	31	578	13.2	70	348	8.0
900----	31	1,033	11.4	66	320	8.2
850----	31	1,509	9.4	64	297	9.3
800----	31	2,011	7.0	59	284	12.4
750----	31	2,539	4.6	53	278	14.8
700----	31	3,099	1.6	48	275	16.3
650----	31	3,687	- 1.5	44	267	16.3
600----	31	4,326	- 5.0	38	267	19.8
550----	31	4,996	- 9.1	33	266	20.8
500----	31	5,737	-13.4	32	265	24.7
450----	31	6,521	-18.9		268	25.3
400----	31	7,397	-25.3		267	29.5
350----	31	8,352	-32.5		267	33.2
300----	31	9,421	-40.4		267	39.1
250----	31	10,641	-48.6		268	46.6
200----	31	12,082	-56.1		274	47.2
175----	31	12,925	-58.4		273	45.5
150----	31	13,890	-60.5		272	40.0
125----	31	15,020	-62.2		272	38.3
100----	31	16,394	-63.8		272	31.5
80-----	31	17,768	-61.9		272	21.8
60-----	30	19,559	-58.7		271	13.4
50-----	30	20,709	-56.9		272	12.6
40-----	30	22,132	-54.4		264	13.0
30-----	29	23,983	-51.6		262	13.4
25-----	27	25,167	-50.0		266	15.2
20-----	23	26,624	-48.0		260	17.3
15-----	20	28,561	-45.7		257	18.5
10-----						

NORTH PLATTE, NEBR.
(917 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	848	4.4	79	350	1.0
1,000--	31	136				
950----	31	559				
900----	31	1,003	8.8	65	270	1.4
850----	31	1,479	11.1	48	287	5.2
800----	31	1,984	9.0	45	288	8.2
750----	31	2,513	5.9	46	284	9.3
700----	31	3,079	2.4	49	281	10.7
650----	31	3,666	- 1.4	49	284	12.8
600----	31	4,307	- 5.5	47	282	15.3
550----	31	4,976	- 9.8	45	279	15.5
500----	31	5,715	-14.6	41	272	15.0
450----	31	6,496	-20.3	41	272	18.8
400----	31	7,368	-27.0	37	266	18.8
350----	31	8,316	-34.3		266	21.0
300----	31	9,377	-42.5		263	24.3
250----	31	10,589	-50.2		261	26.8
200----	31	12,023	-56.6		262	28.8
175----	31	12,866	-58.5		268	30.9
150----	31	13,831	-60.1		272	30.9
125----	31	14,965	-61.6		274	28.0
100----	31	16,344	-63.4		282	22.0
80-----	31	17,718	-62.2		289	17.3
60-----	31	19,498	-61.3		289	13.0
50-----	31	20,633	-59.9		300	10.5
40-----	31	22,032	-58.1		292	7.8
30-----	31	23,853	-56.0		285	8.7
25-----	27	25,022	-54.5		287	10.1
20-----	25	26,459	-52.4		268	13.8
15-----	18	28,318	-50.9		266	20.0
10-----	5	30,907	-46.8			

OAKLAND, CALIF.
(1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	12.4	77	58	0.6
1,000--	31	135	13.3	72	360	1.2
950----	31	568	13.3	61	334	4.7
900----	31	1,023	13.9	42	346	5.1
850----	31	1,504	12.3	35	329	2.9
800----	31	2,010	9.9	31	285	2.9
750----	31	2,542	7.4	27	296	4.3
700----	31	3,108	4.6		292	6.0
650----	31	3,702	1.1		279	7.4
600----	31	4,348	- 2.7		283	8.9
550----	31	5,023	- 7.0		297	14.0
500----	31	5,770	-11.9		302	16.9
450----	31	6,558	-17.7		303	17.1
400----	31	7,439	-24.4		311	19.6
350----	31	8,399	-31.6		309	18.7
300----	31	9,472	-39.7		329	22.9
250----	31	10,696	-48.3		329	27.0
200----	30	12,140	-57.2		313	26.0
175----	29	12.980	-59.7		306	26.6
150----	29	13,938	-62.1		301	24.7
125----	29	15,062	-63.8		289	21.2
100----	28	16,425	-64.2		290	17.5
80-----	28	17,793	-63.2		297	14.2
60-----	28	19,571	-61.1		296	9.9
50-----	28	20,707	-59.8		298	7.8
40-----	27	22,107	-58.3		302	7.0
30-----	24	23,930	-55.7		288	6.6
25-----	21	25,083	-54.4		282	8.5
20-----	14	26,491	-53.2		294	13.4
15-----	10	28,348	-50.6			
10-----						

OKLAHOMA CITY, OKLA.
(969 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	392	13.0	88	109	0.6
1,000--	31	129				
950----	31	566	15.7	74	192	3.7
900----	31	1,022	15.2	63	221	7.0
850----	31	1,505	13.2	56	244	6.0
800----	31	2,013	10.8	52	256	6.4
750----	31	2,550	7.6	47	273	8.4
700----	31	3,114	3.9	46	277	9.7
650----	31	3,709	.0	44	279	10.7
600----	31	4,349	- 4.1	40	275	12.6
550----	31	5,020	- 8.0		279	14.0
500----	30	5,771	-12.6		276	17.1
450----	30	6,560	-18.2		275	21.4
400----	30	7,436	-24.8		272	24.5
350----	30	8,394	-31.8		271	28.4
300----	30	9,467	-39.5		278	31.1
250----	30	10,692	-48.0		268	38.3
200----	30	12,137	-55.7		268	47.6
175----	30	12,982	-58.9		270	49.5
150----	30	13,942	-61.6		273	45.1
125----	28	15,063	-63.9		275	35.2
100----	26	16,424	-65.5		276	24.7
80-----	25	17,784	-64.2		279	16.7
60-----	25	19,556	-61.2		269	9.5
50-----	24	20,695	-59.2		267	8.9
40-----	23	22,098	-56.5		268	11.1
30-----	20	23,925	-53.5		270	15.5
25-----	19	25,099	-51.9		264	17.5
20-----	14	26,548	-50.2		272	19.6
15-----						
10-----						

OMAHA, NEBR.
(968 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	403	7.7	81	100	2.1
1,000--	31	131				
950----	31	560	10.5	63	142	2.3
900----	31	1,009	10.9	52	269	3.7
850----	31	1,484	9.2	44	296	7.6
800----	31	1,985	7.2	43	289	10.5
750----	31	2,509	4.9	41	288	11.5
700----	31	3,074	1.7	41	292	14.0
650----	31	3,662	- 1.8	39	289	15.9
600----	31	4,299	- 5.8	38	283	16.3
550----	31	4,968	-10.1	34	284	17.9
500----	31	5,705	-14.8		287	18.1
450----	31	6,487	-20.2		285	20.0
400----	31	7,357	-26.8		284	21.2
350----	31	8,306	-34.0		281	23.9
300----	31	9,368	-41.9		273	26.8
250----	31	10,582	-50.0		269	29.5
200----	31	12,014	-57.4		271	33.8
175----	31	12,855	-58.7		276	31.5
150----	31	13,821	-59.9		277	29.7
125----	31	14,955	-61.7		277	25.5
100----	31	16,331	-63.1		281	22.7
80-----	31	17,705	-62.5		289	17.9
60-----	31	19,488	-60.6		290	12.0
50-----	31	20,625	-59.4		292	10.5
40-----	30	22,027	-57.5		286	10.5
30-----	28	23,848	-55.6		277	10.5
25-----	26	25,012	-54.0		270	13.8
20-----	24	26,435	-52.6		270	17.1
15-----	18	28,311	-50.1		265	22.7
10-----						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

OCTOBER 1960

PEORIA, ILL.
(993 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	201	7.7	86	133	1.0
1,000--	31	138				
950----	31	564	10.8	67	208	2.3
900----	31	1,015	9.0	62	262	3.7
850----	31	1,488	8.2	50	280	7.2
800----	31	1,987	6.4	48	280	10.1
750----	31	2,511	3.7	46	281	13.0
700----	31	3,073	.9	45	282	14.2
650----	31	3,664	- 2.1	42	279	15.5
600----	31	4,298	- 5.8	40	276	18.1
550----	31	4,967	- 9.8		275	19.4
500----	31	5,705	-14.4		278	21.0
450----	31	6,487	-19.9		280	22.9
400----	31	7,359	-26.4		277	25.6
350----	31	8,310	-33.4		280	28.4
300----	31	9,374	-41.4		275	32.3
250----	31	10,589	-50.0		276	36.1
200----	31	12,023	-56.7		276	37.3
175----	31	12,867	-58.2		278	37.9
150----	31	13,834	-59.4		278	34.4
125----	31	14,971	-61.3		281	29.3
100----	31	16,350	-62.6		282	28.8
80-----	30	17,727	-61.2		283	23.3
60-----	30	19,516	-60.1		276	15.5
50-----	30	20,656	-58.7		278	12.8
40-----	27	22,062	-57.0		273	10.7
30-----	25	23,904	-54.3		271	13.8
25-----	25	25,076	-52.7		265	17.7
20-----	24	26,515	-51.0		260	22.9
15-----	23	28,391	-48.9		257	29.3
10-----	9	31,100	-44.2			
7------						

PITTSBURGH, PA.
(976 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	353	7.6	79	339	1.2
1,000--	31	151				
950----	31	578	9.9	65	289	1.7
900----	31	1,024	8.2	65	289	6.0
850----	31	1,494	5.9	64	290	11.5
800----	31	1,989	4.1	56	286	14.2
750----	31	2,511	1.8	55	280	16.1
700----	31	3,068	- .6	50	283	19.2
650----	31	3,654	- 4.0	49	282	20.8
600----	31	4,285	- 7.4	46	283	23.1
550----	31	4,954	-11.2	40	284	24.7
500----	31	5,685	-15.5		284	26.4
450----	31	6,467	-21.0		281	27.8
400----	31	7,334	-27.2		282	29.1
350----	31	8,282	-34.1		278	33.0
300----	31	9,345	-41.7		277	36.3
250----	31	10,559	-49.9		275	42.7
200----	31	11,993	-56.7		273	45.7
175----	31	12,836	-58.4		276	41.2
150----	31	13,803	-59.6		277	37.5
125----	31	14,939	-61.1		279	33.6
100----	31	16,323	-61.6		278	27.8
80-----	31	17,710	-60.5		274	22.2
60-----	31	19,509	-59.1		279	14.0
50-----	31	20,657	-57.5		270	12.6
40-----	29	22,073	-55.8		271	12.6
30-----	27	23,910	-53.7		268	18.3
25-----	27	25,087	-52.0		266	19.0
20-----	26	26,541	-49.5		268	22.9
15-----	15	28,440	-47.7		273	26.0
10-----						
7------						

PORTLAND, ME.
(1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	20	4.8	88	306	2.9
1,000--	31	123	7.2	71	307	4.1
950----	31	545	6.6	65	290	6.4
900----	31	989	4.6	63	283	7.4
850----	31	1,453	2.7	59	282	10.9
800----	31	1,943	1.5	47	281	14.8
750----	31	2,459	.5	37	274	18.7
700----	31	3,014	- 1.9	37	275	22.2
650----	31	3,597	- 4.8	37	277	26.8
600----	31	4,227	- 7.9	37	274	29.9
550----	31	4,894	-11.9	38	270	32.3
500----	31	5,622	-16.7	40	272	35.8
450----	31	6,398	-22.2	41	270	40.4
400----	31	7,262	-28.1	36	269	46.4
350----	31	8,207	-35.2		269	47.8
300----	31	9,264	-43.2		269	52.7
250----	31	10,470	-51.3		268	53.4
200----	31	11,903	-55.9		269	51.3
175----	31	12,751	-56.4		267	45.3
150----	31	13,728	-57.6		265	40.8
125----	31	14,876	-58.5		262	34.0
100----	31	16,277	-58.7		268	30.9
80-----	31	17,680	-58.3		266	22.5
60-----	30	19,490	-57.7		257	17.5
50-----	29	20,648	-56.9		266	15.7
40-----	28	22,062	-56.0		262	17.1
30-----	28	23,899	-54.3		262	17.9
25-----	28	25,072	-52.9		263	21.6
20-----	26	26,526	-51.3		261	25.1
15-----	21	28,421	-48.6		254	35.0
10-----	6	31,175	-44.3			
7------						

POINT ARGUELLO, CALIF.
(1002 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	113	10.6	87	25	1.7
1,000--	31	129			12	1.9
950----	31	571	13.8	59	359	7.8
900----	31	1,017	15.2	38	12	5.6
850----	31	1,499	13.3	35	352	3.5
800----	31	2,006	10.8	30	328	3.5
750----	31	2,545	8.3	27	320	4.1
700----	31	3,108	5.2	26	323	5.8
650----	31	3,708	1.6		316	7.6
600----	31	4,349	- 2.4		322	10.7
550----	31	5,029	- 6.9		324	11.7
500----	31	5,771	-11.7		326	14.6
450----	31	6,564	-17.7		321	17.1
400----	31	7,440	-24.4		320	17.1
350----	31	8,398	-32.1		321	20.8
300----	31	9,469	-40.3		314	21.6
250----	31	10,690	-48.4		317	24.9
200----	31	12,132	-56.5		307	24.7
175----	31	12,973	-59.6		300	23.5
150----	31	13,931	-62.3		290	24.1
125----	31	15,050	-65.0		283	21.4
100----	30	16,406	-66.6		287	17.5
80-----	29	17,760	-64.8		290	10.7
60-----	29	19,528	-61.7		298	5.1
50-----	29	20,659	-60.5		310	4.5
40-----	29	22,054	-58.3		296	5.8
30-----	29	23,875	-55.3		280	9.1
25-----	29	25,041	-53.7		277	12.0
20-----	28	26,477	-51.3		270	15.5
15-----	26	28,343	-50.0		269	18.5
10-----	23	31,019	-46.3		267	24.5
7------	14	33,410	-42.8			

RAPID CITY, S. DAK.
(904 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	966	5.8	53	323	5.8
1,000--	31	134				
950----	31	556				
900----	31	1,007			322	5.4
850----	31	1,480	9.3	41	316	11.5
800----	31	1,981	6.9	44	313	12.4
750----	31	2,504	4.4	42	300	13.8
700----	31	3,068	.8	41	292	14.8
650----	31	3,654	- 3.1	43	285	17.7
600----	31	4,289	- 7.0	40	278	18.5
550----	31	4,955	-10.8	35	278	21.6
500----	31	5,691	-15.6	32	274	22.5
450----	31	6,469	-21.2	32	273	23.5
400----	31	7,337	-27.6	35	277	24.7
350----	31	8,283	-35.0		277	25.6
300----	31	9,340	-43.3		276	26.8
250----	31	10,547	-50.6		278	26.4
200----	31	11,981	-56.3		274	28.0
175----	31	12,825	-58.4		273	29.1
150----	31	13,792	-59.5		281	27.8
125----	31	14,929	-60.7		281	24.9
100----	31	16,314	-61.6		276	20.6
80-----	30	17,700	-61.3		287	16.7
60-----	30	19,491	-60.1		298	10.3
50-----	30	20,630	-59.5		297	9.1
40-----	28	22,033	-58.8		307	7.2
30-----	24	23,852	-56.8		313	6.0
25-----	22	25,021	-55.6		316	5.6
20-----	21	26,449	-54.0		306	7.0
15-----	15	28,321	-51.0		278	11.7
10-----	5	30,970	-49.0			
7------						

ST. CLOUD, MINN
(978 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	316	4.0	84	175	0.8
1,000--	31	128				
950----	31	553	7.6	69	260	5.1
900----	31	994	6.9	62	269	10.5
850----	31	1,463	5.9	53	280	12.6
800----	31	1,958	4.0	46	273	12.6
750----	31	2,484	1.3	40	281	15.7
700----	31	3,033	- 1.4	35	277	18.7
650----	31	3,618	- 4.7	39	279	21.0
600----	31	4,246	- 8.4	42	280	23.7
550----	31	4,914	-12.2	39	280	27.6
500----	31	5,639	-16.9	38	281	29.1
450----	31	6,415	-22.4	37	277	31.5
400----	31	7,278	-28.5	35	276	35.0
350----	31	8,221	-35.4		278	38.3
300----	31	9,277	-43.2		275	41.0
250----	31	10,484	-51.1		275	41.4
200----	31	11,916	-55.9		280	42.6
175----	31	12,764	-57.3		281	39.2
150----	31	13,736	-58.5		285	33.8
125----	31	14,878	-59.8		287	30.3
100----	31	16,269	-60.8		289	22.5
80-----	31	17,659	-60.2		295	17.7
60-----	31	19,456	-59.4		302	13.2
50-----	31	20,598	-58.7		306	11.1
40-----	31	22,001	-57.9		309	9.5
30-----	29	23,825	-55.9		294	7.4
25-----	29	24,986	-55.4		292	6.8
20-----	21	26,434	-53.6		284	12.4
15-----	16	28,309	-50.1		279	21.4
10-----						

ST. PAUL IS., ALASKA
(1000 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	10	3.0	86	263	3.7
1,000--	31	8			262	6.8
950----	31	419	.3	78	307	8.0
900----	31	853	- 2.6	78	305	8.2
850----	31	1,305	- 5.1	75	303	9.1
800----	31	1,780	- 6.8	64	288	9.1
750----	31	2,278	- 8.9	59	298	8.7
700----	31	2,814	-11.7	57	291	9.9
650----	31	3,373	-15.1	53	288	12.4
600----	31	3,976	-19.0	50	289	12.0
550----	31	4,615	-23.0	49	269	14.4
500----	31	5,312	-27.4	45	284	18.1
450----	31	6,056	-32.3	43	284	18.5
400----	31	6,886	-37.6		287	22.7
350----	31	7,797	-42.7		275	23.9
300----	30	8,830	-46.9		281	27.0
250----	30	10,031	-49.0		281	30.5
200----	30	11,499	-48.7		283	27.6
175----	30	12,377	-48.8		277	27.2
150----	30	13,389	-49.3		274	27.0
125----	29	14,585	-49.4		272	22.2
100----	29	16,045	-50.1		267	19.8
80-----	29	17,501	-50.5		265	16.7
60-----	29	19,369	-51.9		263	14.6
50-----	27	20,552	-52.8		258	12.2
40-----	24	21,987	-53.3		267	10.7
30-----	23	23,843	-52.6		243	2.3
25-----	21	25,022	-52.1		233	.6
20-----	21	26,468	-51.3		161	2.1
15-----	19	28,348	-49.9		130	1.7
10-----	5	31,076	-47.8			

SALEM, OREG.
(1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	61	8.5	90	176	3.1
1,000--	31	151	9.9	84	185	3.5
950----	31	580	10.8	72	226	4.7
900----	31	1,029	9.6	66	237	6.6
850----	31	1,502	7.6	57	242	8.7
800----	31	2,000	5.4	49	245	11.1
750----	31	2,524	2.6	46	253	13.4
700----	31	3,080	- .5	45	259	13.4
650----	31	3,665	- 3.5	43	254	18.1
600----	31	4,298	- 6.9	40	267	18.5
550----	31	4,966	-10.8	40	270	21.4
500----	31	5,699	-15.4	41	272	22.5
450----	31	6,483	-20.2		278	25.8
400----	31	7,351	-26.4	40	280	29.1
350----	31	8,302	-33.3	41	277	31.5
300----	31	9,368	-41.0		283	36.3
250----	31	10,585	-49.6		287	38.5
200----	31	12,018	-57.3		289	37.9
175----	31	12,857	-59.5		285	35.2
150----	31	13,820	-60.3		281	30.5
125----	31	14,952	-61.6		283	25.8
100----	31	16,333	-61.3		281	22.7
80-----	30	17,720	-60.9		272	11.1
60-----	30	19,514	-59.5		277	8.5
50-----	30	20,656	-59.4		284	7.0
40-----	29	22,059	-58.0		289	5.8
30-----	28	23,881	-56.3		301	4.3
25-----	26	25,045	-55.3		359	2.3
20-----	23	26,473	-53.9		5	4.1
15-----	20	28,323	-52.6		340	6.6
10-----	6	30,933	-49.7			

SALT LAKE CITY, UTAH
(873 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,288	6.1	68	136	7.2
1,000--	31	162				
950----	31	586				
900----	31	1,038				
850----	31	1,512	10.6	43	161	5.8
800----	31	2,016	8.4	39	178	3.1
750----	31	2,545	4.9	43	214	2.9
700----	31	3,106	1.0	47	275	6.4
650----	31	3,691	- 2.8	49	268	8.9
600----	31	4,329	- 6.8	48	262	11.1
550----	31	4,994	-11.3	43	271	12.0
500----	31	5,729	-16.1	38	276	13.0
450----	31	6,514	-20.9		281	15.3
400----	31	7,378	-26.9		281	15.3
350----	31	8,327	-34.2		281	14.4
300----	31	9,390	-42.3		270	14.2
250----	31	10,601	-49.5		278	16.1
200----	31	12,040	-56.0		293	17.3
175----	31	12,886	-57.3		289	19.0
150----	31	13,857	-59.3		279	19.6
125----	31	14,996	-61.5		281	18.5
100----	31	16,372	-62.7		280	16.9
80-----	29	17,753	-62.0		286	12.8
60-----	29	19,534	-60.8		303	9.1
50-----	29	20,669	-60.1		311	6.4
40-----	27	22,060	-58.5		299	5.2
30-----	24	23,871	-56.3		285	8.2
25-----	23	25,023	-55.3		296	9.7
20-----	21	26,452	-53.5		290	9.5
15-----	13	28,311	-51.7		277	22.2
10-----						

SAN ANTONIO, TEX.
(986 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	243	19.1	93	52	2.1
1,000--	31	121				
950----	31	565	19.0	82	156	6.4
900----	31	1,028	17.6	73	179	9.3
850----	31	1,517	15.7	65	203	6.6
800----	31	2,030	13.1	57	238	4.3
750----	31	2,567	10.6	49	238	4.3
700----	31	3,143	7.2	48	277	4.1
650----	31	3,743	3.5	47	256	6.6
600----	31	4,396	- .7	46	269	12.2
550----	31	5,077	- 4.7	40	253	16.3
500----	31	5,831	- 9.3	35	258	22.0
450----	31	6,634	-14.7	33	267	25.6
400----	30	7,522	-20.7	38	269	32.3
350----	29	8,496	-27.5		273	34.0
300----	29	9,587	-35.7		272	43.5
250----	29	10,832	-44.9		279	45.7
200----	29	12,291	-55.0		273	60.2
175----	25	13,116	-60.1		264	56.3
150----	24	14,068	-64.8			
125----	24	15,170	-68.9			
100----	24	16,497	-70.3			
80-----	23	17,826	-68.8			
60-----	22	19,568	-62.7			
50-----	21	20,696	-59.5			
40-----	21	22,102	-56.1			
30-----	19	23,946	-52.0			
25-----	19	25,130	-50.5			
20-----	19	26,590	-49.0			
15-----	18	28,483	-47.6			
10-----	5	31,150	-43.4			

SAN DIEGO, CALIF.
(999 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	124	13.6	85	39	1.2
1,000--	31	114			19	2.7
950----	31	548	16.7	60	350	1.6
900----	31	1,011	16.0	43	310	2.1
850----	31	1,495	13.9	38	301	2.7
800----	31	2,004	10.9	36	290	3.3
750----	31	2,532	7.8	33	287	3.9
700----	31	3,105	4.8	32	301	4.3
650----	31	3,700	1.3		304	6.0
600----	31	4,346	- 2.6		299	9.7
550----	31	5,021	- 6.9		297	11.7
500----	31	5,770	-11.7		303	14.2
450----	31	6,560	-17.4		297	17.1
400----	31	7,442	-24.2		293	19.4
350----	31	8,403	-31.1		288	22.7
300----	31	9,479	-38.9		288	27.2
250----	31	10,708	-47.4		291	26.0
200----	31	12,159	-54.7		279	28.6
175----	31	13,008	-57.8		277	30.5
150----	31	13,974	-61.2		276	27.0
125----	31	15,097	-64.1		273	23.9
100----	31	16,457	-66.1		278	16.5
80-----	31	17,811	-65.1		287	9.3
60-----	31	19,578	-61.9		299	4.5
50-----	31	20,712	-59.7		296	4.3
40-----	30	22,112	-57.5		285	6.6
30-----	29	23,944	-54.6		272	8.9
25-----	27	25,112	-53.2		277	11.3
20-----	25	26,550	-50.9		269	15.7
15-----	24	28,428	-49.4		264	16.9
10-----	6	31,075	-47.8			

SAN JUAN, P. R.
(1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	24.7	85	150	3.1
1,000--	31	125	25.0	77	131	6.6
950----	31	576	22.3	76	108	11.9
900----	31	1,043	19.5	73	113	12.8
850----	31	1,534	16.8	65	118	11.9
800----	31	2,049	14.2	53	114	10.7
750----	31	2,592	11.4	48	115	9.3
700----	31	3,166	8.1	45	115	6.2
650----	31	3,769	4.7	47	106	5.8
600----	31	4,423	1.1	42	102	3.9
550----	31	5,107	- 2.8	39	93	2.5
500----	31	5,867	- 7.3	36	162	1.4
450----	31	6,671	-12.5	35	218	2.1
400----	30	7,571	-18.3	35	273	2.9
350----	29	8,554	-25.2	33	288	3.7
300----	29	9,654	-33.6		303	5.6
250----	29	10,906	-43.6		288	9.1
200----	29	12,367	-55.6		301	12.0
175----	29	13,205	-61.8		299	14.2
150----	29	14,145	-68.0		310	15.7
125----	28	15,228	-72.6		301	10.5
100----	26	16,527	-74.4		344	4.1
80-----	22	17,843	-70.6		45	5.1
60-----	20	19,576	-63.5		86	15.7
50-----	19	20,711	-60.1		88	21.2
40-----	16	22,120	-55.6		95	23.3
30-----	16	23,974	-51.3		98	28.0
25-----	15	25,163	-49.4		93	29.5
20-----	12	26,620	-48.4			
15-----	8	28,525	-43.8			
10-----						

SANTA MONICA, CALIF.
(1010 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	38	15.3	76	26	3.5
1,000--	31	120	16.2	71	35	3.3
950----	31	561	16.4	55	44	3.7
900----	31	1,017	16.2	38	22	3.3
850----	31	1,502	13.9	36	347	2.3
800----	31	2,010	10.7	34	313	2.9
750----	31	2,541	7.9	29	339	2.9
700----	31	3,111	4.7	29	347	6.0
650----	31	3,707	.8	30	327	6.0
600----	31	4,351	- 3.1	27	311	8.4
550----	31	5,031	- 7.4		317	11.5
500----	31	5,772	-12.0		311	14.0
450----	31	6,565	-17.7		309	17.7
400----	31	7,442	-24.4		304	17.7
350----	31	8,401	-31.7		301	20.8
300----	31	9,473	-39.7		299	23.7
250----	31	10,698	-47.7		291	23.9
200----	31	12,147	-55.2		280	24.5
175----	31	12,994	-58.2		280	27.0
150----	31	13,959	-61.3		279	25.1
125----	31	15,082	-64.2		277	22.2
100----	31	16,443	-65.7		280	18.5
80-----	31	17,800	-64.8		288	9.9
60-----	31	19,568	-61.9		301	6.0
50-----	31	20,702	-59.8		305	5.8
40-----	31	22,102	-57.8		271	5.4
30-----	30	23,927	-54.6		277	10.1
25-----	30	25,098	-52.8		267	12.6
20-----	28	26,538	-51.0		276	17.9
15-----	25	28,410	-49.4		272	21.0
10-----	15	31,055	-47.0		271	21.6

SAULT STE. MARIE, MICH.
(988 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	221	5.2	87	327	1.0
1,000--	31	123				
950----	31	543	5.9	76	277	5.8
900----	31	986	4.1	68	279	10.9
850----	31	1,450	2.1	65	282	13.2
800----	31	1,938	.3	64	279	14.6
750----	31	2,453	- 2.0	56	283	18.3
700----	31	3,000	- 4.7	50	284	20.4
650----	31	3,577	- 7.1	45	283	22.5
600----	31	4,202	-10.5	42	281	24.9
550----	31	4,861	-14.4	42	284	27.0
500----	31	5,584	-19.1	42	283	29.1
450----	31	6,354	-24.2	39	287	32.6
400----	31	7,212	-29.9	38	291	38.7
350----	31	8,150	-36.7		291	41.6
300----	31	9,201	-44.2		289	44.9
250----	31	10,404	-51.0		287	47.2
200----	30	11,836	-55.1		285	48.2
175----	29	12,684	-55.8		288	43.7
150----	29	13,662	-57.0		289	35.2
125----	28	14,820	-58.0		284	30.1
100----	28	16,226	-58.5		292	26.0
80-----	27	17,636	-58.4		290	18.8
60-----	27	19,445	-57.9		291	13.8
50-----	25	20,589	-57.6		295	10.1
40-----	24	21,994	-56.8		287	10.5
30-----	23	23,831	-55.2		291	12.6
25-----	22	25,000	-54.3		292	12.2
20-----	20	26,412	-53.8		280	15.5
15-----	15	28,222	-52.9			
10-----	5	30,970	-49.6			

SEATTLE, WASH.
(1002 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	125	9.5	89	162	4.7
1,000--	31	145			155	3.5
950----	31	572	9.8	77	203	9.7
900----	31	1,020	7.9	71	215	13.0
850----	31	1,490	5.9	66	229	12.8
800----	31	1,985	3.5	59	241	12.4
750----	31	2,503	.9	53	249	14.4
700----	31	3,058	- 1.9	49	257	16.3
650----	31	3,640	- 5.1	47	259	18.7
600----	31	4,269	- 8.8	45	263	21.2
550----	31	4,934	-12.5	42	268	22.7
500----	31	5,661	-16.8	43	273	25.5
450----	31	6,438	-21.9	42	273	29.3
400----	31	7,302	-27.9	43	277	33.4
350----	31	8,249	-34.6	41	279	37.7
300----	31	9,309	-42.1		282	41.4
250----	31	10,522	-49.9		285	47.0
200----	31	11,959	-56.4		285	43.7
175----	31	12,804	-58.0		280	38.9
150----	30	13,776	-59.4		283	34.6
125----	29	14,912	-60.4		282	27.6
100----	28	16,303	-59.0		280	20.0
80-----	26	17,699	-58.9		280	14.8
60-----	26	19,504	-58.6		278	10.3
50-----	25	20,655	-58.1		290	7.2
40-----	24	22,065	-57.6		305	4.5
30-----	24	23,886	-55.9		332	4.5
25-----	24	25,049	-55.0		347	4.7
20-----	23	26,474	-53.8		350	7.2
15-----	11	28,322	-51.5			
10-----						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	SHEMYA, ALASKA (1004 MB.)						SHREVEPORT, LA. (1006 MB.)						SPOKANE, WASH. (933 MB.)						SWAN IS., W. I. (1010 MB.)						TAMPA, FLA. (1014 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	37	5.1	83	268	8.5	31	76	16.1	90	133	2.1	31	722	5.3	76	163	3.3	31	10	26.9	86	99	5.2	31	8	20.6	91	60	4.5
1,000--	29	73			248	12.6	31	134	16.9	84	143	2.9	31	148					31	101	26.9	83	101	7.0	31	133	21.8	83	73	5.1
950----	29	488	2.2	78	268	15.0	31	569	17.1	74	200	5.1	31	573					31	550	23.8	83	113	9.3	31	580	20.3	75	114	2.7
900----	29	924	- .4	74	272	16.9	31	1,034	14.8	70	237	4.9	31	1,018	8.7	60	205	7.0	31	1,027	21.0	80	124	9.5	31	1,045	17.8	68	179	2.9
850----	29	1,380	- 3.0	67	279	17.5	31	1,517	13.0	60	278	5.2	31	1,490	6.9	55	236	8.9	31	1,521	18.0	76	121	8.5	31	1,532	15.1	61	218	4.7
800----	29	1,858	- 5.4	59	281	17.1	31	2,025	10.5	51	286	6.0	31	1,986	4.2	56	251	10.9	31	2,039	14.9	74	125	8.2	31	2,044	12.1	60	[illegible]	6.6
750----	29	2,363	- 6.9	54	278	20.2	31	2,557	7.8	44	291	7.8	31	2,507	1.4	54	261	13.4	31	2,580	12.0	67	127	8.5	31	2,582	9.7	48	250	7.4
700----	29	2,901	- 9.3	53	277	23.9	31	3,126	4.4	41	288	11.3	31	3,061	- 1.7	54	265	16.5	31	3,159	9.1	60	127	8.4	31	3,154	7.2	38	257	9.5
650----	29	3,465	-12.2	52	274	26.6	31	3,722	1.0	37	289	13.2	31	3,644	- 5.3	52	267	19.6	31	3,766	5.7	56	126	8.0	31	3,757	4.0	34	270	12.8
600----	29	4,079	-15.7	46	276	26.2	31	4,366	- 2.5	36	286	16.1	31	4,272	- 9.0	50	272	20.8	31	4,421	2.0	54	117	7.6	31	4,408	.6		267	14.8
550----	29	4,728	-19.4	44	270	32.1	31	5,045	- 6.6	36	282	19.2	31	4,935	-12.7	44	275	22.0	31	5,113	- 2.0	48	101	7.8	31	5,094	- 3.7		271	18.1
500----	29	5,433	-23.5	41	270	36.9	31	5,790	-11.6		277	20.6	31	5,663	-17.1	39	276	25.6	31	5,871	- 6.5	44	94	7.6	31	5,849	- 8.3		275	20.8
450----	29	6,191	-28.3	39	272	39.8	31	6,581	-17.2		278	24.3	31	6,437	-22.4	40	280	28.8	31	6,681	-11.2	40	76	7.2	30	6,654	-13.8		276	24.3
400----	29	7,034	-33.6		276	47.0	31	7,463	-23.6		279	29.3	31	7,300	-28.5	37	282	30.9	31	7,582	-17.0	35	61	8.0	30	7,545	-19.5		274	27.6
350----	29	7,960	-39.1		280	51.3	31	8,426	-30.2		278	33.0	31	8,244	-35.3		290	33.8	31	8,572	-23.6		52	8.4	30	8,524	-26.7		277	30.7
300----	29	9,002	-45.3		285	54.2	31	9,506	-37.9		271	41.8	31	9,301	-42.8		293	37.9	31	9,680	-32.0		35	8.2	28	9,620	-34.7		279	37.3
250----	28	10,214	-50.3		286	59.8	31	10,739	-46.2		269	52.7	31	10,513	-49.6		291	38.1	31	10,942	-42.2		23	9.1	28	10.870	-44.2		280	42.9
200----	28	11,664	-51.9		281	56.7	31	12,194	-55.1		271	63.1	31	11,953	-55.6		290	35.8	31	12,411	-54.6		10	12.6	28	12,334	-54.8		286	48.6
175----	27	12,521	-52.3		283	54.0	31	13,038	-59.5		271	62.8	31	12,802	-56.9		288	32.1	31	13,253	-61.5		9	12.6	28	13,179	-60.2		289	48.4
150----	26	13,496	-52.6		281	43.5	31	13,995	-62.9		273	54.2	31	13,776	-58.2		286	30.5	31	14,192	-68.8		17	11.9	27	14,131	-65.0		285	42.7
125----	25	14,672	-52.9		280	39.2	31	15.111	-66.0		274	40.6	31	14,920	-59.4		282	25.3	30	15,261	-75.3		19	11.5	27	15,231	-69.6		283	36.1
100----	24	16,112	-53.6		284	32.8	30	16,454	-68.1		275	24.1	31	16,316	-60.0		283	19.8	30	16,547	-77.3		48	7.6	26	16,549	-71.1		282	23.3
80------	24	17,548	-53.5		280	25.8	30	17.796	-66.7		275	15.2	31	17,712	-59.1		291	14.4	30	17,843	-72.0		89	9.3	26	17,876	-67.9		295	15.9
60------	24	19,398	-53.8		278	17.7	30	19,554	-61.9		282	8.5	31	19,516	-58.8		275	8.9	29	19,572	-64.3		94	14.0	25	19,629	-61.4		[illegible]	1.9
50------	21	20,556	-54.5		267	14.6	30	20,689	-59.1		270	7.2	30	20,663	-58.4		300	5.8	28	20,692	-61.0		104	17.5	24	20,766	-58.4		190	1.7
40------	21	21,983	-55.0		267	8.4	29	22,094	-56.5		265	9.9	28	22,070	-57.3		326	6.2	27	22,090	-56.3		101	23.1	23	22,183	-54.9		47	2.3
30------	19	23,809	-54.8		265	7.4	28	23,934	-52.4		276	10.1	24	23,906	-56.1		322	2.5	25	23,937	-52.3		103	26.8	20	24,031	-52.4		73	5.6
25------	18	24,981	-53.7		265	3.7	25	25,111	-51.4		275	11.3	22	25,075	-55.0		346	5.1	24	25,115	-50.5		99	25.8	18	25,223	-49.5		88	4.1
20------	17	26,419	-52.3		241	2.1	22	26,558	-49.8		270	11.3	19	26,513	-54.4		340	8.9	22	26,577	-48.9		97	24.7	16	26,693	-48.0		94	6.0
15------	8	28,276	-49.8				13	28,425	-47.9		268	21.6	15	28,385	-52.3		357	5.6	15	28,477	-44.7		101	19.2	13	28,603	-45.9		92	6.6

Standard pressure surface (mb.)	TATOOSH IS., WASH. (1012 MB.)						TOPEKA, KANS. (984 MB.)						TUCSON, ARIZ. (923 MB.)						WASHINGTON, D. C. (1007 MB.)						WINNEMUCCA, NEV (871 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	31	10.8	90	105	6.2	31	269	9.7	90	88	2.3	31	781	13.9	61	142	5.6	31	84	8.5	87	359	1.9	31	1,310	2.0	56	68	1.6
1,000--	31	128	11.0	83	130	7.4	31	131					31	106					31	143	10.7	80	342	1.2	31	179				
950----	31	554	9.7	75	201	10.5	31	562	12.9	67	144	3.3	31	540					31	574	10.8	68	317	6.4	31	600				
900----	31	1,004	7.2	75	218	11.5	31	1,016	12.7	59	240	3.9	31	1,006	18.2	45	142	5.4	31	1,023	9.2	66	303	10.5	31	1,046				
850----	31	1,473	5.1	73	229	14.4	31	1,495	10.8	57	275	6.0	31	1,494	15.9	43	151	3.3	31	1,496	7.7	66	291	11.1	31	1,516	10.3	42	80	3.1
800----	31	1,966	3.1	63	237	16.1	31	1,999	8.3	55	284	7.4	31	2,006	12.3	46	184	3.1	31	1,995	5.7	58	277	14.0	31	2,019	8.5	39	340	2.5
750----	31	2,482	.7	58	241	17.1	31	2,524	5.5	52	290	9.5	31	2,537	8.3	49	230	6.8	31	2,521	3.4	52	278	15.7	31	2,543	5.0	41	293	3.3
700----	31	3,039	- 2.4	57	254	21.4	31	3,092	2.4	49	295	11.1	31	3,111	5.2	38	226	8.5	31	3,079	.6	46	278	18.3	31	3,109	1.7	41	280	5.4
650----	31	3,617	- 5.7	55	247	22.9	31	3,683	- 1.1	45	296	12.8	31	3,708	1.4	34	228	10.9	31	3,667	- 2.6	46	274	20.8	31	3,694	- 1.9	39	274	8.0
600----	31	4,248	- 9.0	51	251	25.3	31	4,322	- 5.1	41	295	14.4	31	4,354	- 2.3	27	242	11.9	31	4,302	- 6.1	43	271	21.6	31	4,335	- 5.7	37	282	9.5
550----	31	4,909	-13.0	51	246	28.2	31	4,994	- 9.3	39	287	14.8	31	5,031	- 6.5		253	13.2	31	4,969	-10.1	37	269	24.3	31	5,004	- 9.8		293	11.9
500----	31	5,638	-17.3	49	255	30.9	31	5,733	-14.1		278	16.1	31	5,780	-11.5		253	14.8	31	5,708	-14.6	35	270	25.1	31	5,741	-14.7		309	12.6
450----	31	6,411	-22.3	44	256	33.2	31	6,517	-19.5		284	18.3	31	6,571	-17.3		252	16.9	31	6,489	-20.0		268	24.5	31	6,523	-20.2		309	14.4
400----	31	7,276	-28.0	44	256	38.3	31	7,391	-26.2		284	19.2	31	7,454	-23.7		259	19.6	31	7,363	-26.3	34	269	28.8	31	7,394	-26.6		301	16.7
350----	31	8,222	-35.0	41	266	42.0	31	8,343	-33.4		281	21.6	31	8,415	-31.0		261	24.7	31	8,315	-33.3		271	30.7	31	8,345	-33.8		312	20.4
300----	31	9,280	-42.7		267	44.1	31	9,409	-40.9		275	27.2	31	9,490	-38.7		261	30.1	31	9,380	-41.1		272	34.4	31	9,409	-41.3		312	24.5
250----	31	10,489	-50.8		262	51.9	31	10,627	-49.5		271	29.1	31	10,721	-46.4		257	35.8	31	10,597	-49.2		274	39.8	31	10,626	-49.1		309	23.3
200----	31	11,923	-56.6		262	46.6	31	12,064	-56.4		274	37.1	31	12,177	-54.0		253	46.4	31	12,034	-56.1		278	43.1	31	12,067	-56.1		300	22.5
175----	30	12,773	-57.9		271	37.7	31	12,908	-58.4		277	36.3	31	13,027	-57.8		253	46.8	30	12,876	-58.5		276	41.4	30	12,911	-58.5		290	20.6
150----	30	13,742	-59.2		263	33.2	31	13,874	-60.0		277	34.0	31	13,992	-60.7		260	40.6	29	13,852	-60.3		273	38.5	30	13,875	-60.9		282	20.0
125----	30	14,882	-60.3		270	26.8	30	15,004	-62.0		278	31.1	30	15,116	-65.2		263	31.3	29	14,986	-61.5		275	35.6	30	15,007	-62.2		273	19.0
100----	30	16,275	-59.7		268	17.9	30	16,376	-63.6		279	25.1	30	16,470	-66.6		266	22.5	29	16,368	-62.2		273	29.5	30	16,379	-63.5		274	13.6
80------	30	17,669	-59.5		275	17.3	30	17,748	-62.5		284	19.6	29	17,822	-65.5		275	13.6	29	17,748	-61.4		273	21.8	29	17,752	-62.0		284	8.7
60------	28	19,473	-59.0		279	10.5	30	19,531	-61.1		287	12.8	29	19,587	-61.8		286	4.9	28	19,540	-58.8		271	13.4	26	19,539	-60.8		305	7.4
50------	28	20,617	-58.8		278	7.2	30	20,669	-59.2		279	9.1	29	20,719	-59.9		292	4.3	28	20,688	-57.7		266	13.8	26	20,675	-60.1		293	6.0
40------	27	22,023	-58.2		308	3.7	29	22,073	-57.2		278	8.9	28	22,119	-57.2		269	6.6	28	22,103	-55.7		267	14.4	26	22,070	-58.9		314	4.3
30------	25	23,843	-56.6		323	3.3	28	23,901	-54.7		275	13.0	26	23,957	-53.8		266	9.7	27	23,948	-53.0		258	15.3	26	23,885	-56.9		297	6.2
25------	22	25,004	-55.8		299	2.1	27	25,077	-53.0		271	16.9	24	25,139	-52.2		273	12.6	22	25,120	-51.6		265	17.1	26	25,044	-55.5		288	6.6
20------	17	26,421	-54.9		316	6.0	25	26,532	-50.7		269	23.7	22	26,584	-50.7		268	14.0	21	26,575	-49.6		265	22.9	25	26,472	-54.1		286	11.9
15------	10	28,296	-53.5				20	28,422	-48.4		262	30.5	20	28,460	-48.3		247	16.5	14	28,437	-47.9		261	28.8	22	28,331	-51.8		281	17.7
10------							9	31,126	-45.1										7	31,110	-45.6				6	30,979	-49.0			

Standard pressure surface (mb.)	YAKUTAT, ALASKA (1000 MB.)						YUMA, ARIZ. (996 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	12	4.6	90	88	5.4	30	105	18.4	44	355	2.1
1,000--	31	14			95	4.7	30	93				
950----	31	435	4.7	82	123	13.2	30	539	22.0	40	304	4.9
900----	31	874	2.1	83	144	15.9	30	1,006	19.1	40	316	4.3
850----	31	1,334	- .7	83	153	17.3	30	1,493	15.4	45	302	1.2
800----	31	1,816	- 3.7	81	161	16.5	30	2,004	11.5	50	178	1.4
750----	31	2,325	- 6.7	75	169	14.8	30	2,537	7.9	45	183	3.1
700----	31	2,861	-10.0	69	172	13.2	30	3,106	4.9	38	208	4.3
650----	31	3,428	-13.9	65	180	13.6	30	3,706	1.2	37	237	4.7
600----	31	4,033	-17.7	63	195	15.7	30	4,346	- 2.7	31	252	7.4
550----	31	4,679	-21.9	59	203	17.3	30	5,029	- 7.5		259	9.7
500----	31	5,375	-26.8	54	217	18.7	30	5,766	-12.4		263	12.0
450----	31	6,125	-32.0	49	224	21.6	30	6,555	-18.1		259	16.5
400----	31	6,954	-37.2		228	28.2	30	7,431	-25.1		264	16.3
350----	31	7,865	-42.9		229	32.4	30	8,388	-32.1		263	19.8
300----	31	8,893	-47.7		233	39.6	30	9,459	-39.6		268	24.7
250----	31	10,090	-49.9		233	39.4	30	10,685	-47.5		263	31.9
200----	30	11,550	-49.4		233	30.7	28	12,134	-54.6		256	37.3
175----	30	12,425	-49.4		238	27.4	27	12,980	-57.7		259	36.9
150----	30	13,434	-49.9		240	25.5	25	13,942	-60.8		258	37.1
125----	30	14,624	-50.5		239	22.0	25	15,067	-63.8		257	30.5
100----	30	16,077	-51.3		249	20.4	25	16,428	-65.0		264	22.5
80------	30	17,527	-51.4		254	15.7	25	17,791	-63.6		268	14.0
60------	29	19,382	-53.0		259	10.3	24	19,568	-60.9		295	4.5
50------	29	20,556	-53.6		266	7.4	23	20,703	-59.3		281	6.2
40------	29	21,989	-53.8		263	6.6	23	22,107	-57.2		282	7.4
30------	28	23,839	-53.8		302	2.9	22	23,936	-53.8		262	9.1
25------	27	25,009	-53.2		321	1.0	19	25,130	-51.9		261	8.7
20------	22	26,447	-52.4		339	1.7	12	26,625	-49.8		294	5.2
15------	12	28,322	-51.9									

Note All observations scheduled at 1200, G.C.T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0° C. have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant wind speed is biased toward a lower value as the number of observations on which the resultant is based lessens. See note following Table 22 in the January 1950 issue of Climatological Data National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun.

OCTOBER 1960

MADISON, WIS.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Oct.									
2-----	S 0.94	S 1.00	S 1.12	1.31	----	----	----	----	----
3-----	----	----	----	1.29	----	----	----	----	----
6-----	S .98	S 1.10	S 1.20	S 1.38	1.45	1.34	1.21	1.08	0.98
7-----	S 1.01	S 1.06	S 1.20	S 1.31	1.37	1.29	1.09	.94	.80
8-----	M .85	M .98	M 1.10	M 1.26	M 1.36	1.26	1.10	.96	.80
10----	I .67	I .79	I .93	M 1.14	S 1.26	----	----	----	----
17----	----	----	----	S 1.18	S 1.31	S 1.23	S 1.04	S .96	S .82
24----	1.07	1.15	1.22	1.41	1.43	1.38	1.23	1.08	.97
Averages	0.92	1.01	1.13	1.28	1.36	1.30	1.30	1.00	0.87

TUCSON, ARIZ.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Oct.									
2-----	0.81	----	----	1.21	----	----	----	----	----
3-----	----	0.82	0.96	1.15	----	----	----	----	----
4-----	----	----	----	----	----	----	----	0.94	0.81
5-----	.86	.96	1.06	1.20	1.38	----	1.12	1.00	----
6-----	.85	.94	1.04	1.23	1.33	----	----	----	----
7-----	.84	----	1.05	----	1.36	----	----	----	----
8-----	----	----	1.06	----	----	----	----	----	----
10----	----	----	----	----	1.38	----	----	----	----
11----	----	----	----	----	1.36	----	----	----	----
12----	----	----	----	1.22	1.38	----	----	----	----
13----	.86	.97	1.10	----	----	----	----	1.00	----
15----	----	----	----	----	----	----	----	----	.82
16----	----	.93	1.06	1.23	----	----	1.06	.93	----
19----	.88	.98	1.12	----	1.38	----	----	.97	.87
20----	.97	1.06	1.18	1.31	1.42	----	----	----	.89
21----	1.00	1.10	1.21	1.36	1.44	----	----	----	----
22----	.99	1.08	1.19	1.32	----	----	----	----	----
23----	.87	----	----	----	----	----	----	----	----
25----	.88	.97	----	----	----	----	----	----	----
29----	.87	.95	1.10	----	----	----	----	----	.90
30----	.97	1.06	1.17	1.32	1.42	1.35	1.20	1.09	1.00
31----	.98	1.08	----	----	----	----	----	----	.96
Averages	0.90	0.99	1.10	1.26	1.38	1.35	1.13	0.99	0.89

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Oct.									
1-----	----	----	----	----	----	0.78	0.71	0.90	----
2-----	0.88	0.99	1.06	1.24	1.40	1.27	1.10	.97	0.87
3-----	----	----	----	----	1.32	1.03	----	----	----
4-----	.85	.96	1.09	1.25	1.41	1.24	1.12	.99	----
5-----	.93	1.04	1.14	1.23	1.42	1.27	1.07	.93	.79
6-----	.91	----	1.09	1.25	1.38	1.24	1.11	.98	.84
7-----	----	----	1.19	1.32	1.44	1.29	1.11	.98	.78
8-----	.91	1.02	1.13	1.25	1.37	1.21	.99	.87	.75
11----	----	----	----	1.25	1.34	1.20	1.03	.93	.75
12----	.87	.98	----	1.12	1.33	1.16	1.00	.87	.68
13----	.92	1.03	1.13	1.27	1.41	1.30	1.15	1.06	.91
14----	.97	1.08	1.19	1.34	1.40	1.25	----	----	----
19----	----	----	----	----	1.37	----	1.04	.90	.76
20----	.94	1.05	1.15	1.26	1.37	1.28	1.13	1.03	.92
21----	.96	1.08	1.17	1.35	1.39	1.32	1.20	1.11	.98
22----	1.07	1.17	1.26	1.39	1.46	1.33	1.23	1.13	1.00
23----	1.05	1.15	1.25	1.37	1.45	1.33	1.21	1.11	.97
24----	----	----	----	----	1.29	----	1.00	----	----
25----	.93	1.05	1.16	1.30	1.36	1.25	1.11	1.00	.87
26----	.91	1.04	1.15	1.29	1.37	1.27	1.09	.99	.83
27----	.84	.95	1.07	1.19	1.33	1.17	.99	.85	.71
28----	.64	----	----	1.06	1.31	----	----	----	----
29----	.97	1.05	1.17	1.31	1.38	1.31	1.15	1.03	.88
30----	1.05	1.15	1.28	1.40	1.47	1.35	1.26	1.15	1.05
31----	1.08	1.16	1.27	1.39	1.42	1.33	1.19	1.08	.97
Averages	0.92	1.06	1.16	1.29	1.39	1.27	1.11	0.99	0.86

OMAHA, NEBR.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Oct.									
3-----	----	----	----	M 1.08	M 1.10	H 0.79	M 0.56	M 0.43	M 0.32
4-----	----	----	H 0.62	H .81	H .85	----	----	----	----
5-----	----	----	----	----	----	M .85	M .63	M .45	M .29
6-----	S 0.65	S 0.79	S .97	S 1.16	S 1.22	S 1.06	S .88	S .77	S .63
7-----	S .71	S .81	S .80	S .96	S 1.08	S .95	M .79	M .64	M .54
8-----	S .52	M .63	M .76	M .91	M .99	.92	.77	.68	.53
9-----	S .52	S .58	S .71	S .86	S .96	S .85	M .67	M .52	M .39
10----	M .36	M .56	M .61	M .68	M .84	----	----	----	----
11----	----	----	----	----	M .80	----	----	----	----
14----	S .39	S .58	S .71	S .91	S 1.00	----	----	----	----
16----	----	----	----	----	----	S 1.04	S .85	S .71	S .56
19----	----	----	----	S .98	1.19	S 1.08	S .86	S .75	S .60
21----	----	----	----	----	----	M .90	----	----	----
23----	----	----	S .84	S .99	S 1.05	----	----	----	----
24----	M .41	M .51	M .65	M .82	H .91	M .84	M .64	H .53	H .35
25----	----	----	----	----	H 1.04	S .98	S .77	S .71	----
26----	S .71	S .81	.94	1.09	S 1.17	S 1.08	S .91	S .77	----
27----	M .56	M .66	M .79	S .97	S 1.01	M .93	M .69	M .53	----
28----	S .54	S .67	S .80	S .99	S 1.04	----	----	----	----
Averages	0.54	0.66	0.77	0.94	1.02	0.94	0.75	0.62	0.47

MAUNA LOA OBS., HAWAII

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Oct.									
1-----	----	1.25	1.33	1.44	----	----	----	----	----
2-----	----	----	----	----	1.62	1.48	----	----	----
3-----	----	----	----	----	1.61	----	----	----	----
4-----	----	----	----	----	----	1.44	----	----	----
5-----	----	----	----	----	----	1.47	1.38	1.27	----
6-----	1.18	1.28	----	1.47	----	----	----	----	----
7-----	1.20	1.27	1.36	1.48	----	----	----	----	----
8-----	1.22	1.29	1.38	1.48	----	----	----	----	----
12----	----	----	----	----	----	----	1.31	1.22	1.13
13----	1.23	1.30	1.39	1.51	1.62	1.48	1.38	1.26	1.20
14----	1.22	1.30	1.40	1.52	1.59	----	----	----	----
15----	1.20	1.28	1.38	1.50	----	----	----	----	----
16----	1.23	1.30	1.41	1.52	----	----	----	----	----
21----	1.18	1.25	1.38	1.46	1.57	----	----	----	----
23----	1.18	----	----	----	----	----	1.32	1.22	1.16
24----	1.21	1.29	1.38	1.49	1.59	----	----	----	----
25----	1.24	1.32	1.40	1.51	1.62	1.50	1.38	1.34	1.21
26----	1.18	1.26	1.36	1.48	----	----	----	----	----
27----	----	1.29	1.39	1.49	1.58	1.45	1.34	1.26	1.17
28----	----	1.29	1.39	1.50	----	1.46	----	----	----
29----	1.24	1.32	1.42	1.53	1.60	----	----	----	----
30----	1.26	1.34	1.41	1.51	1.60	----	----	----	----
31----	1.29	1.37	1.45	1.56	----	----	----	----	----
Averages	1.22	1.29	1.39	1.50	1.60	1.47	1.35	1.26	1.17

GUAM, M. I.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
Air mass	4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92

No observations during October

* Values corresponding to true solar noon.
H Haze.
I Intense haze - indeterminable.
M Moderate haze - indeterminable.
S Slight haze - indeterminable.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Albuquerque, N.Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill Obs.,Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area	Cape Hatteras, N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.
Oct. 1-----	342	345	61	538	341	433	64	130	303	415	448	455	512	593	445	333	424	424	449	415
Oct. 2-----	554	454	185	527	110	400	39	21	438	331	432	307	287	---	546	424	422	169	379	417
Oct. 3-----	462	445	296	511	166	429	33	82	412	395	434	410	445	666	492	233	445	---	144	245
Oct. 4-----	546	198	19	501	390	289	31	140	406	420	418	407	457	676	(443)	(318)	399	153	164	386
Oct. 5-----	544	280	11	422	269	223	59	153	410	422	420	411	455	---	483	377	---	358	435	336
Oct. 6-----	536	437	41	140	181	201	58	170	405	40	163	53	491	---	496	79	---	399	472	245
Oct. 7-----	538	444	119	228	161	140	93	236	377	410	299	427	---	---	287	226	276	330	453	122
Average-------	503	372	104	410	231	302	54	133	393	348	373	353	441	---	(456)	(284)	393	305	356	309
Oct. 8-----	523	423	174	417	357	171	53	135	317	408	361	403	496	680	109	395	247	297	412	253
Oct. 9-----	185	396	3	477	378	323	39	75	367	371	389	385	510	656	194	383	417	319	312	373
Oct. 10-----	482	381	3	443	388	384	106	123	357	406	217	401	433	664	382	339	358	363	376	398
Oct. 11-----	505	343	164	489	55	407	118	53	166	283	112	280	459	684	503	153	472	262	436	69
Oct. 12-----	(484)	164	32	465	240	425	140	106	297	407	202	402	495	650	503	235	429	341	351	255
Oct. 13-----	504	---	192	459	169	346	56	175	277	380	387	360	474	---	440	249	416	280	224	255
Oct. 14-----	494	241	19	463	211	364	33	174	370	186	393	180	---	682	305	366	155	265	260	322
Average-------	(454)	325	84	459	257	346	78	120	307	349	294	344	478	669	348	303	356	304	339	275
Oct. 15-----	---	343	138	404	291	285	66	209	379	270	321	242	418	697	409	85	218	165	270	313
Oct. 16-----	142	383	65	420	340	399	21	89	357	60	---	42	436	665	170	93	310	255	431	347
Oct. 17-----	135	---	200	457	334	411	40	65	221	89	351	78	---	679	433	---	432	341	419	331
Oct. 18-----	174	---	181	403	78	422	52	73	197	368	362	358	344	687	488	205	375	232	88	228
Oct. 19-----	410	389	4	396	73	187	32	55	361	161	344	147	129	669	439	318	377	23	280	50
Oct. 20-----	475	155	13	411	101	228	52	13	346	27	328	25	178	573	101	---	241	90	430	219
Oct. 21-----	474	249	7	305	40	433	19	39	235	318	203	296	369	659	418	217	294	266	331	122
Average-------	302	304	87	399	180	338	40	77	299	185	318	170	312	663	351	183	321	196	321	230
Oct. 22-----	474	232	1	473	50	406	12	36	315	321	287	311	314	605	483	232	451	302	301	190
Oct. 23-----	468	279	183	473	50	405	12	134	291	241	297	243	251	647	445	215	421	79	403	65
Oct. 24-----	338	342	1	449	190	430	15	113	272	70	331	59	137	(418)	442	41	439	---	383	196
Oct. 25-----	440	116	60	457	94	411	22	63	118	109	332	100	336	---	506	230	448	137	133	277
Oct. 26-----	437	329	114	426	176	139	51	94	239	330	149	321	441	---	402	139	374	50	363	204
Oct. 27-----	424	322	77	420	40	251	27	47	296	189	256	199	338	---	301	289	390	65	---	56
Oct. 28-----	356	262	112	407	169	355	9	120	149	220	98	254	434	---	224	292	315	218	---	132
Average-------	420	269	78	444	110	342	21	86	240	211	250	212	321	---	400	206	405	142	316	160
Oct 29-----	433	25	1	426	274	393	11	57	253	225	330	258	---	(626)	84	279	405	246	81	275
Oct. 30-----	453	86	21	246	62	255	12	79	71	43	318	41	337	685	81	233	398	195	76	105
Oct. 31-----	437	64	28	181	84	104	42	61	120	81	182	80	465	---	162	191	132	44	---	56
Nov. 1-----	425	295	62	469	218	409	42	170	218	42	202	15	437	671	214	57	(382)	105	---	245
Nov. 2-----	409	123	29	450	153	394	29	80	284	296	155	297	429	582	452	109	412	102	235	87
Nov. 3-----	282	302	10	440	268	404	29	37	237	296	290	289	379	670	450	101	407	74	353	277
Nov. 4-----	275	30	46	440	249	390	19	46	---	296	296	300	376	650	443	93	404	163	139	264
Average-------	388	132	28	379	187	335	26	76	197	183	253	183	404	(647)	269	152	(363)	133	177	187

1960	Davis, Calif.	Dodge City, Kans.	East Lansing, Mich.	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Flaming Gorge, Utah	Fort Worth, Tex.	Fresno, Calif.	Glasgow, Mont.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Lander, Wyo.	Laramie, Wyo.
Oct. 1-----	426	450	461	462	497	100	422	518	388	276	433	371	393	555	466	598	399	466	499	382
Oct. 2-----	424	412	413	325	342	65	501	515	389	---	487	365	238	518	399	582	236	486	494	456
Oct. 3-----	423	414	263	330	339	---	481	478	373	392	398	372	426	521	135	590	308	221	411	456
Oct. 4-----	428	480	427	504	478	44	466	317	400	220	486	182	325	466	434	575	185	173	462	442
Oct. 5-----	260	592	160	550	478	96	482	532	394	391	489	374	83	450	240	579	348	175	472	447
Oct. 6-----	265	---	419	(545)	388	118	481	495	275	381	484	353	256	210	412	476	311	364	471	448
Oct. 7-----	334	519	430	(538)	300	105	437	284	253	359	467	343	52	163	420	578	307	405	426	409
Average-------	366	463	368	(465)	403	88	467	448	353	337	463	337	253	412	358	568	303	328	462	434
Oct. 8-----	438	510	334	525	408	100	253	515	325	278	271	314	61	307	108	539	374	524	274	320
Oct. 9-----	441	481	405	424	229	73	123	475	302	102	124	282	134	451	217	471	116	440	39	271
Oct. 10-----	206	427	367	498	256	80	192	477	262	312	268	316	318	457	408	501	312	---	173	397
Oct. 11-----	380	154	254	523	295	102	274	480	409	311	250	257	456	---	402	562	201	468	415	290
Oct. 12-----	384	476	300	526	333	---	314	308	394	335	413	191	446	455	382	556	305	454	354	289
Oct. 13-----	320	407	344	521	242	132	98	340	290	187	355	192	425	486	357	517	300	409	322	218
Oct. 14-----	415	254	187	520	458	121	320	452	370	300	152	226	421	389	325	567	239	180	282	125
Average-------	369	387	313	505	317	101	225	435	336	261	262	254	323	424	314	531	264	379	266	273
Oct. 15-----	371	41	28	502	449	30	459	452	385	327	244	208	258	407	216	548	225	410	423	428
Oct. 16-----	396	292	345	212	424	110	441	274	376	334	301	306	334	176	310	418	52	271	424	413
Oct. 17-----	372	123	359	438	348	134	362	205	368	66	141	248	377	473	394	486	347	296	371	325
Oct. 18-----	366	48	324	464	435	44	209	147	356	---	242	259	413	466	261	533	370	260	41	76
Oct. 19-----	340	439	46	(465)	428	110	429	76	347	324	420	232	230	242	24	520	366	155	357	377
Oct. 20-----	340	433	205	490	421	96	363	507	339	159	406	247	308	378	268	501	5	281	316	276
Oct. 21-----	306	408	167	498	356	---	370	490	328	99	378	135	434	316	309	528	48	436	266	271
Average-------	356	255	210	(438)	409	87	376	307	357	218	304	234	336	394	254	505	202	301	314	309
Oct. 22-----	332	445	162	477	411	66	405	478	340	279	404	263	418	503	334	522	116	473	343	381
Oct. 23-----	347	433	34	473	309	---	397	458	326	281	392	205	374	484	282	399	111	412	359	371
Oct. 24-----	349	413	220	416	374	101	402	365	302	170	378	136	427	518	379	465	221	334	299	283
Oct. 25-----	350	311	319	460	393	44	393	80	325	290	392	253	429	523	354	487	35	347	350	359
Oct. 26-----	340	425	(47)	455	383	48	391	197	339	286	388	240	250	209	105	485	236	153	349	374
Oct. 27-----	319	241	77	448	395	23	382	328	325	277	364	---	125	308	66	493	165	366	353	321
Oct. 28-----	336	272	27	378	387	40	306	223	321	264	---	129	257	358	144	500	258	269	289	215
Average-------	339	363	(127)	444	379	54	382	304	325	264	386	205	326	415	238	479	163	336	331	330
Oct 29-----	336	329	203	453	---	37	118	247	305	29	300	148	391	479	261	482	249	67	70	193
Oct. 30-----	319	97	209	464	376	53	388	439	315	156	394	120	392	187	147	481	285	253	368	313
Oct. 31-----	310	---	35	454	369	21	336	(462)	306	275	375	185	39	125	52	470	64	454	251	250
Nov. 1-----	307	377	14	456	365	121	316	452	295	156	372	193	387	491	272	457	142	437	231	280
Nov. 2-----	221	408	33	450	261	92	346	443	187	256	350	140	376	478	292	345	203	395	283	273
Nov. 3-----	22	275	142	372	85	146	92	430	35	---	175	206	391	489	342	183	77	412	81	135
Nov. 4-----	308	192	172	321	164	77	132	363	251	225	170	274	379	481	171	353	405	331	146	141
Average-------	260	280	115	424	270	78	247	(405)	242	183	305	181	336	390	220	396	204	336	204	226

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

OCTOBER 1960

1960	Las Vegas, Nev.	Lemont, Ill.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.	Matanuska, Alaska	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Page, Ariz.	Phoenix, Ariz.	Portland, Me.	Pullman, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	Salt Lake City, Utah	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Seattle-Tacoma, Wash.	Shreveport, La.	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Tucson, Ariz.	Washington, D. C. (Obs & Test Fac Ctr)
Oct. 1	529	451	438	483	371	396	347	391	116	584	452	330	504	494	456	503	413	435	415	515	505	487	437	380	440	---	483	505	354	288	454	363	495	411	461	421	563	457	502
Oct. 2	513	467	436	480	468	499	476	369	182	668	---	489	474	418	395	326	---	421	455	523	454	391	427	443	506	---	485	497	455	99	365	351	492	396	246	329	510	443	377
Oct. 3	517	373	244	453	487	486	423	272	32	656	428	523	---	355	387	407	429	283	421	426	472	381	409	445	515	---	460	411	364	227	338	91	442	359	370	383	478	542	445
Oct. 4	465	425	474	282	481	465	437	96	141	654	420	401	479	321	404	348	408	225	316	508	475	454	355	432	495	---	473	136	511	363	269	332	430	319	282	312	421	492	190
Oct. 5	490	332	305	248	465	489	307	431	187	610	281	326	500	134	428	350	321	207	500	(509)	497	399	401	417	512	---	461	340	420	102	388	291	307	358	327	460	481	545	290
Oct. 6	478	445	243	484	365	398	460	404	131	411	235	348	515	193	87	128	435	211	497	(506)	485	70	108	422	479	---	462	---	337	257	75	178	(426)	74	222	473	404	533	129
Oct. 7	501	419	315	45	491	501	440	443	126	346	165	364	506	120	430	468	429	162	470	490	491	373	55	417	505	---	376	468	329	402	407	157	(146)	87	460	427	275	(537)	460
Average	499	416	351	354	447	462	413	344	131	561	330	397	496	291	370	361	406	278	439	(497)	483	365	313	422	493	---	457	443	395	248	328	252	(391)	286	338	401	448	(507)	342
Oct. 8	468	304	303	154	384	332	434	439	87	473	328	405	505	338	409	393	413	183	488	158	268	441	240	322	268	---	185	503	441	284	368	248	270	294	302	---	399	381	115
Oct. 9	177	407	217	283	327	263	350	418	128	332	423	459	415	296	382	334	401	284	466	(202)	295	400	425	402	310	---	91	445	521	364	342	340	421	372	344	---	221	542	72
Oct. 10	387	406	339	463	395	381	401	390	84	328	390	387	449	356	386	412	363	249	459	222	152	424	316	311	376	---	95	406	477	309	364	344	418	336	437	---	344	503	424
Oct. 11	486	383	(483)	399	461	461	329	387	166	310	182	325	359	415	319	375	365	380	421	445	312	288	125	365	504	---	304	445	499	373	316	88	468	126	359	---	460	512	397
Oct. 12	484	358	(473)	409	440	470	356	162	106	581	277	412	479	412	408	423	177	390	324	466	480	361	297	385	486	---	234	261	492	365	379	302	391	190	440	---	514	517	375
Oct. 13	448	256	445	362	371	376	227	239	67	635	352	363	463	336	384	379	93	331	341	471	470	393	400	318	469	---	310	338	409	99	331	277	357	305	380	---	437	517	---
Oct. 14	401	159	---	136	441	447	208	35	---	524	373	221	484	273	346	328	369	290	459	83	163	68	374	278	453	---	443	349	472	77	320	207	349	324	351	---	482	381	--
Average	407	325	(377)	315	403	390	329	296	107	455	332	368	451	346	376	378	312	301	423	(292)	320	339	311	340	409	---	238	393	473	267	346	258	382	278	373	---	408	479	277
Oct. 15	110	133	---	272	456	474	129	181	---	540	360	359	226	159	279	344	301	192	230	160	162	185	295	401	434	---	445	281	489	71	298	257	393	285	346	---	429	--	348
Oct. 16	376	393	---	281	446	430	393	368	---	343	368	395	47	226	78	210	395	284	282	259	389	42	365	358	477	---	426	59	470	208	175	80	183	314	215	---	401	517	262
Oct. 17	401	377	489	430	444	445	383	318	169	151	367	525	66	421	142	383	364	352	223	87	77	66	---	354	438	---	389	227	481	282	325	257	368	289	419	---	464	450	385
Oct. 18	439	305	358	282	406	425	---	30	156	---	246	421	342	424	367	382	108	382	---	344	343	325	---	102	466	---	407	205	415	219	342	211	231	302	405	---	332	--	374
Oct. 19	437	49	34	117	416	427	136	400	180	340	244	466	---	35	221	146	396	69	256	447	447	205	---	375	464	---	414	207	425	141	156	49	292	268	87	---	476	--	92
Oct. 20	437	295	493	477	425	440	176	282	46	207	139	393	264	168	39	61	184	160	492	442	455	32	---	283	467	---	391	127	404	85	27	122	414	198	149	---	353	495	224
Oct. 21	436	209	457	445	426	436	301	370	87	607	145	372	453	380	333	337	290	398	448	442	449	237	---	223	470	---	328	359	426	222	272	58	460	82	205	---	415	(490)	310
Average	376	252	366	329	431	440	253	278	12[illegible]	365	267	419	233	259	208	266	291	262	322	312	332	156	---	299	459	---	400	252	444	175	228	148	335	248	261	---	410	(488)	285
Oct. 22	437	280	473	446	383	425	187	212	109	582	274	468	---	390	342	288	199	364	453	442	423	371	293	281	432	---	390	265	429	125	273	137	455	248	329	---	460	482	383
Oct. 23	305	353	320	421	300	353	340	364	70	543	160	288	---	369	271	126	345	240	439	309	178	283	263	334	350	---	376	129	251	105	130	31	406	214	100	---	496	261	112
Oct. 24	409	369	(479)	429	293	290	385	349	63	516	291	340	---	416	70	134	328	398	---	392	377	24	267	238	416	---	382	91	436	221	103	199	---	274	201	---	495	443	---
Oct. 25	408	310	462	367	352	376	134	31	105	603	312	426	413	376	201	110	326	385	---	423	420	228	271	342	407	---	376	97	422	326	274	---	---	234	206	---	465	459	---
Oct. 26	403	38	199	153	271	258	80	365	115	516	205	359	347	78	324	304	356	106	---	422	393	329	115	335	289	---	373	222	399	22	266	124	---	---	234	---	396	(430)	233
Oct. 27	395	102	182	350	337	361	136	342	93	584	131	356	422	275	181	143	326	59	231	396	392	205	88	323	405	---	379	198	431	40	167	54	293	---	175	---	454	(448)	120
Oct. 28	404	103	159	408	323	364	171	31	60	586	142	424	212	335	245	98	329	257	208	371	386	285	62	281	416	---	361	215	423	44	139	135	191	---	233	---	468	400	49
Average	394	222	(325)	368	323	347	205	242	88	561	216	380	348	320	233	172	316	258	333	394	367	246	194	305	388	---	377	174	399	126	193	113	336	243	211	---	462	(418)	180
Oct. 29	405	178	194	74	288	330	129	52	58	562	237	444	417	278	230	157	19	322	122	417	411	316	304	142	387	37	211	251	414	81	126	248	92	---	226	---	442	(448)	268
Oct. 30	411	110	224	108	331	395	48	28	27	585	260	450	455	194	86	169	68	243	224	427	422	88	162	290	426	39	365	417	391	173	88	67	263	---	333	---	446	462	276
Oct. 31	398	66	152	435	235	331	63	307	103	392	190	264	445	136	86	45	174	69	440	408	419	76	61	291	415	49	297	448	368	113	65	45	444	---	38	---	58	(460)	78
Nov. 1	391	43	434	397	213	306	43	325	23	408	264	175	439	396	51	53	322	365	417	407	403	32	267	248	409	61	307	429	412	87	82	168	432	---	262	---	374	453	207
Nov. 2	292	76	234	400	207	232	59	186	65	(497)	86	230	429	245	296	250	232	277	415	278	307	279	111	295	277	143	291	418	---	68	249	65	412	80	156	---	485	418	237
Nov. 3	132	325	396	403	41	33	326	295	59	522	298	469	391	382	243	203	260	359	404	142	316	223	96	67	86	269	78	345	211	90	214	208	420	233	75	---	465	418	---
Nov. 4	187	56	417	312	366	369	69	226	20	565	294	346	364	378	282	261	95	329	252	168	99	268	275	128	368	195	114	345	168	75	276	240	404	210	328	---	472	176	334
Average	317	122	2[illegible]3	304	240	285	105	203	51	(504)	233	340	420	287	182	163	167	281	325	321	340	183	182	209	338	113	238	379	327	98	157	149	352	---	202	---	392	(405)	233

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

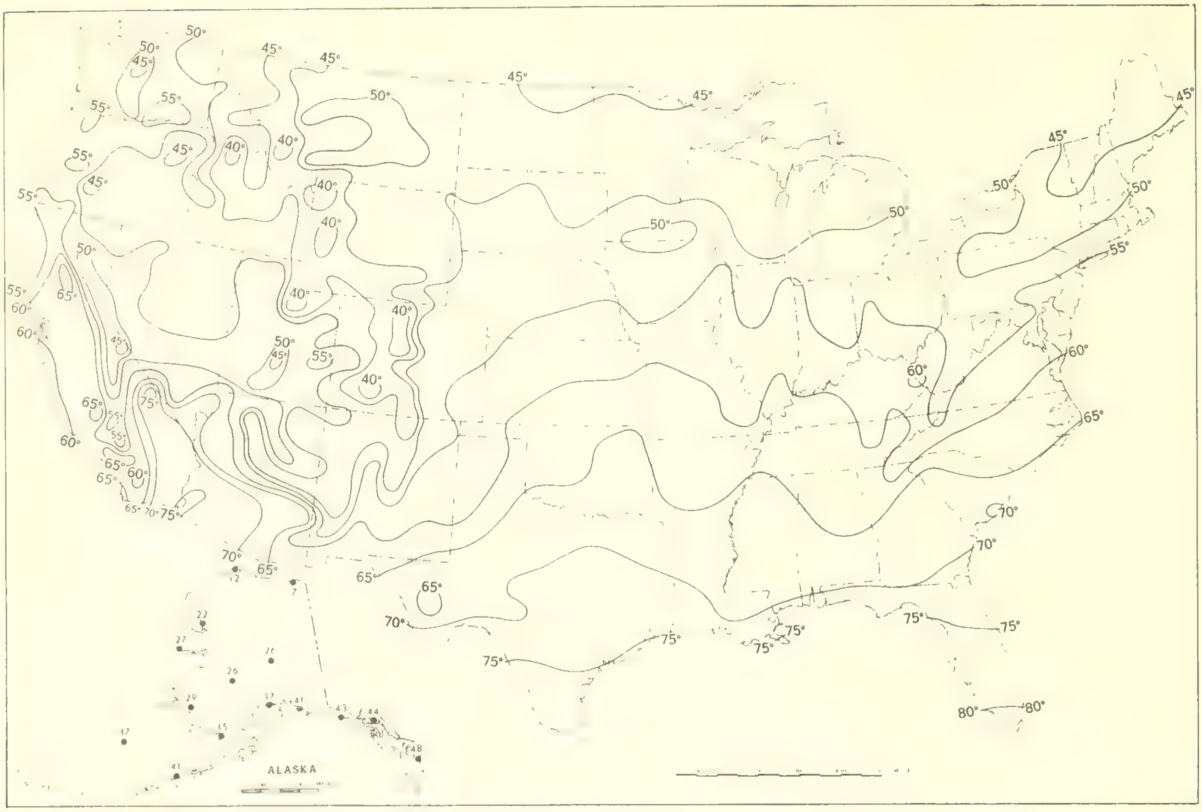
OCTOBER 1960

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bismarck, N. Dak.	---	287	279	264	271	278	269	283	259	256	253	276	289	292	299	270	287	328	296	284	281	270	262	---	---	250	252	---	308	---	---
Caribou, Me.	---	305	---	327	313	---	---	278	306	---	---	---	303	299	---	---	---	---	279	---	317	227	314	---	374	---	279	242	250	---	263
Fort Worth, Tex.	282	279	278	---	295	294	285	294	265	272	268	270	254	272	269	---	---	---	---	279	291	273	270	---	---	279	---	---	---	267	279
Green Bay, Wis.	---	288	280	266	268	269	280	273	265	229	227	---	263	---	---	273	274	279	---	---	301	---	284	270	262	---	---	---	---	---	---
Mauna Loa, Hawaii	269	268	269	275	283	277	278	279	---	272	---	259	264	269	272	265	---	265	266	---	268	---	263	269	267	271	263	264	270	277	270

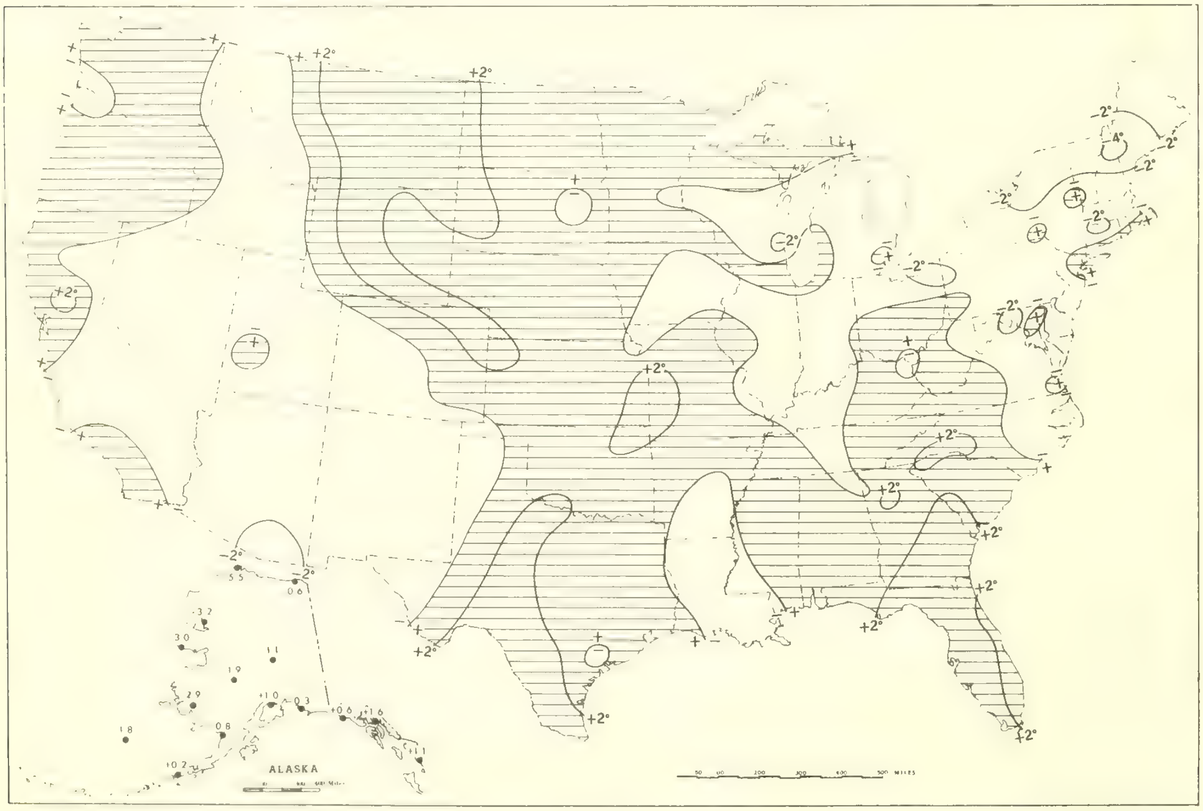
The spectrophotometer measures the total amount of ozone in the atmosphere, i. e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observations can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations, therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational procedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer," Annals of the International Geophysical Year, Volume V, Pergamon Press, 1957.

Chart I. A. Average Temperature (°F.) at Surface, October 1960.



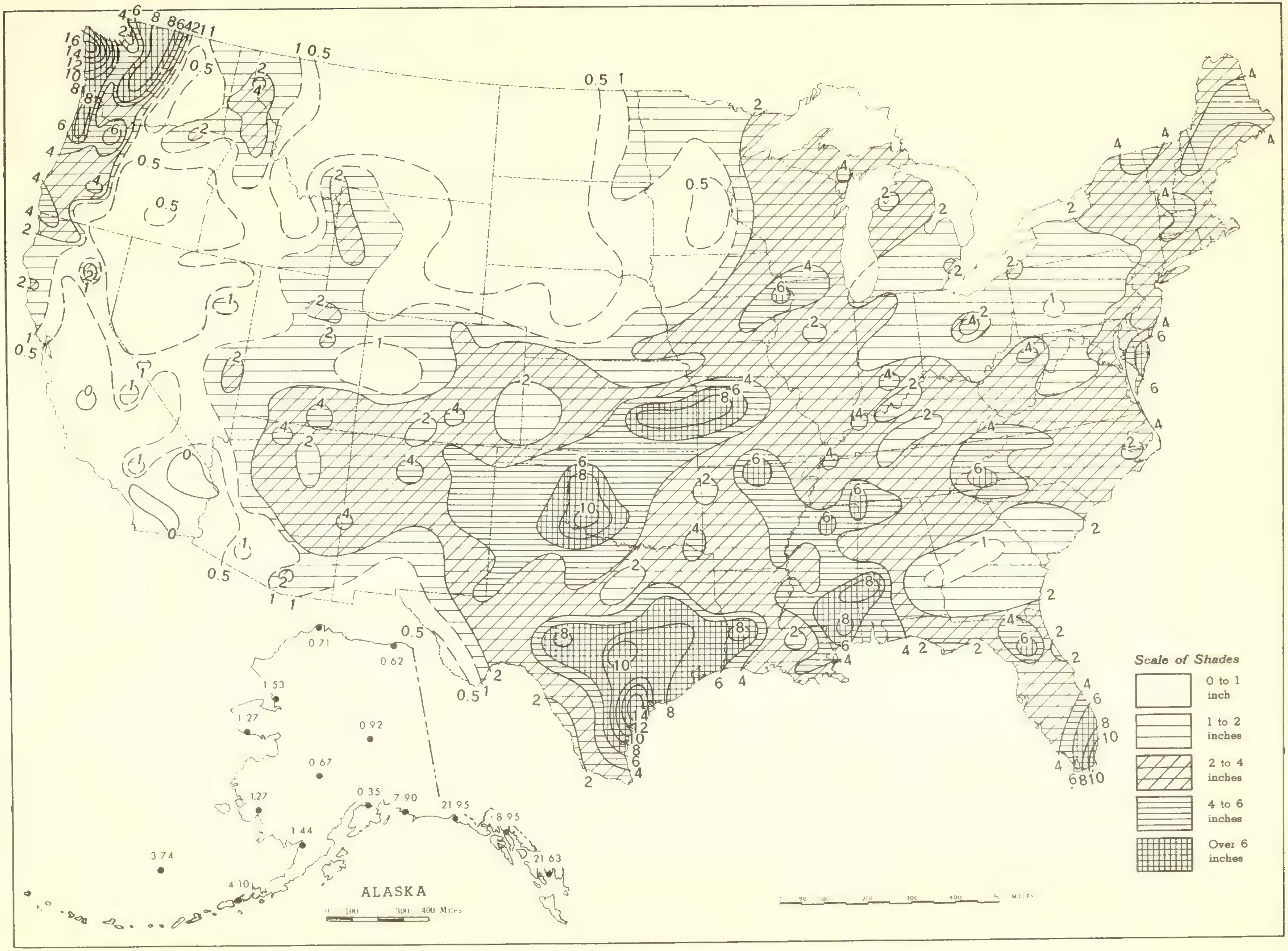
B. Departure of Average Temperature from Normal (°F.), October 1960.



A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

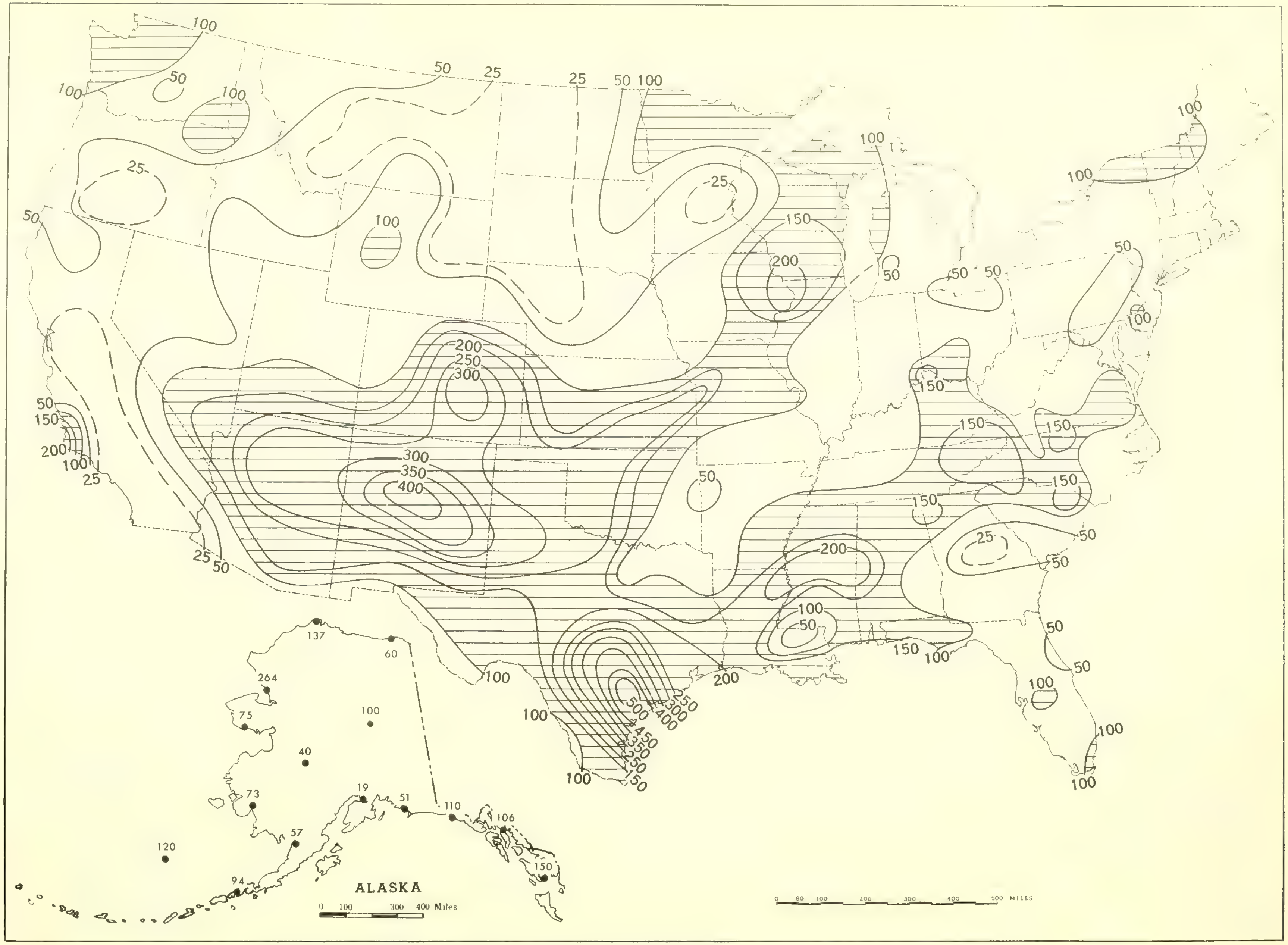
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), October 1960.



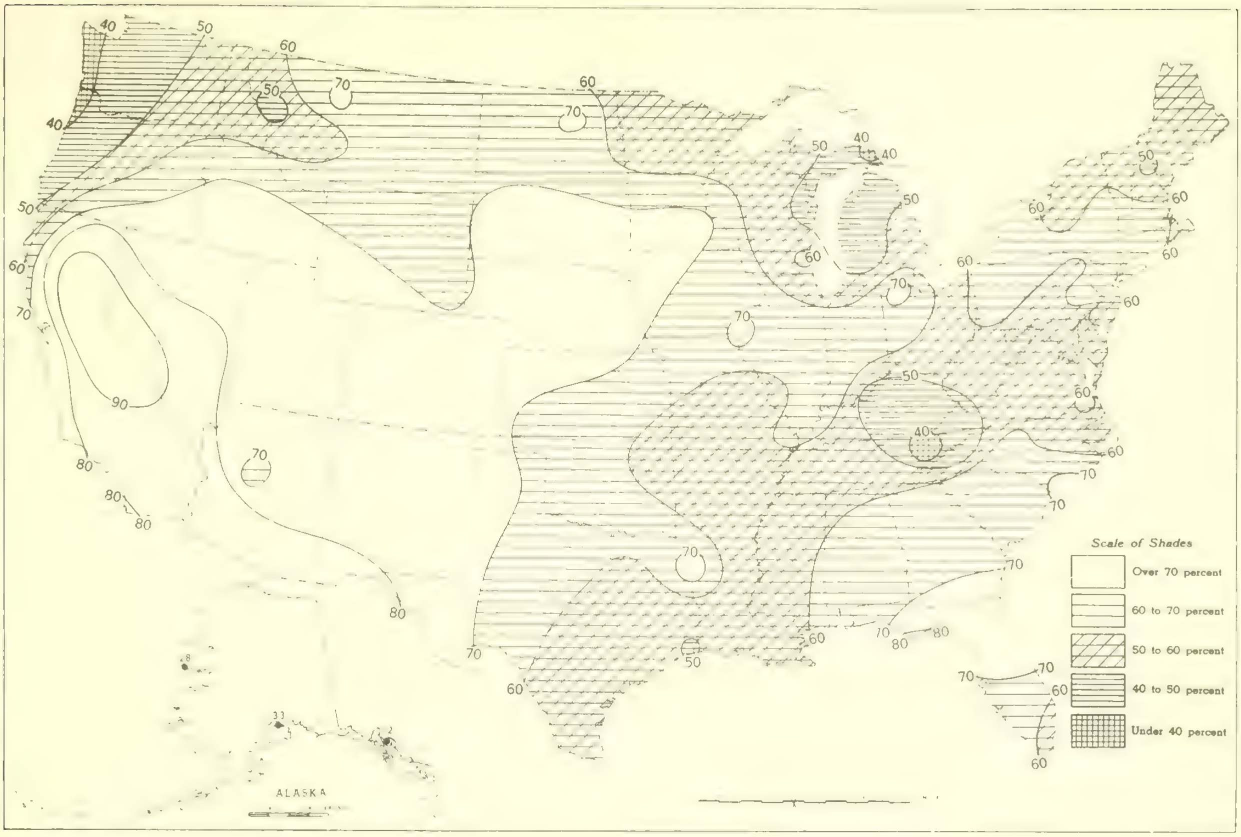
Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, October 1960.

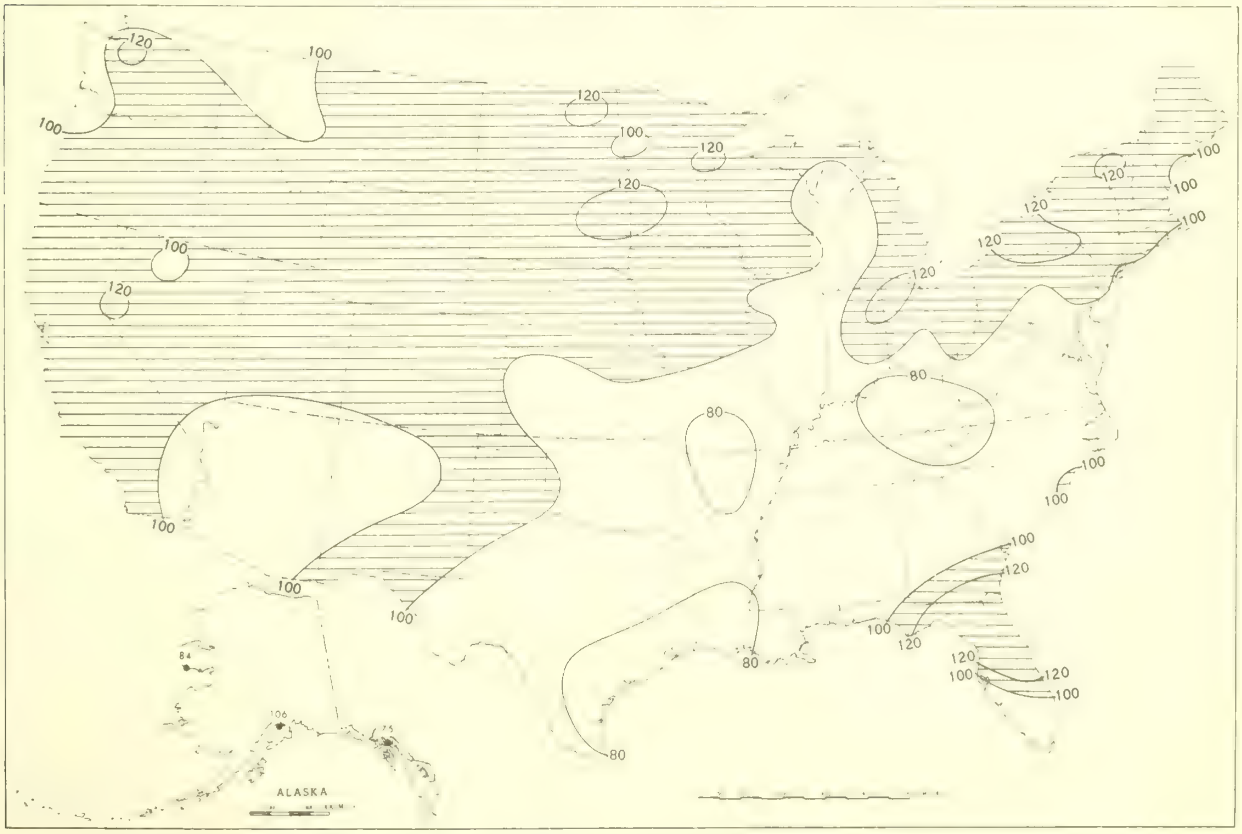


Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart VII. A. Percentage of Possible Sunshine, October 1960.

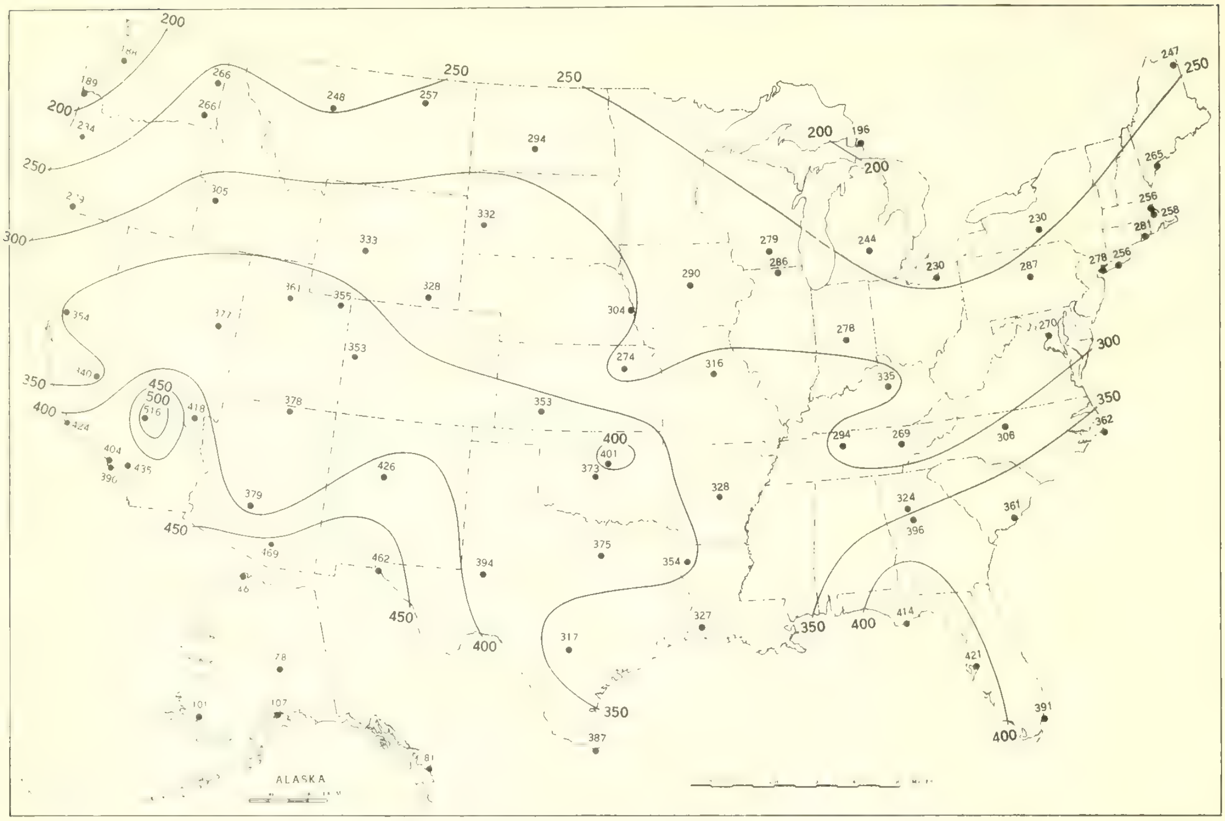


B. Percentage of Mean Monthly Sunshine, October 1960.

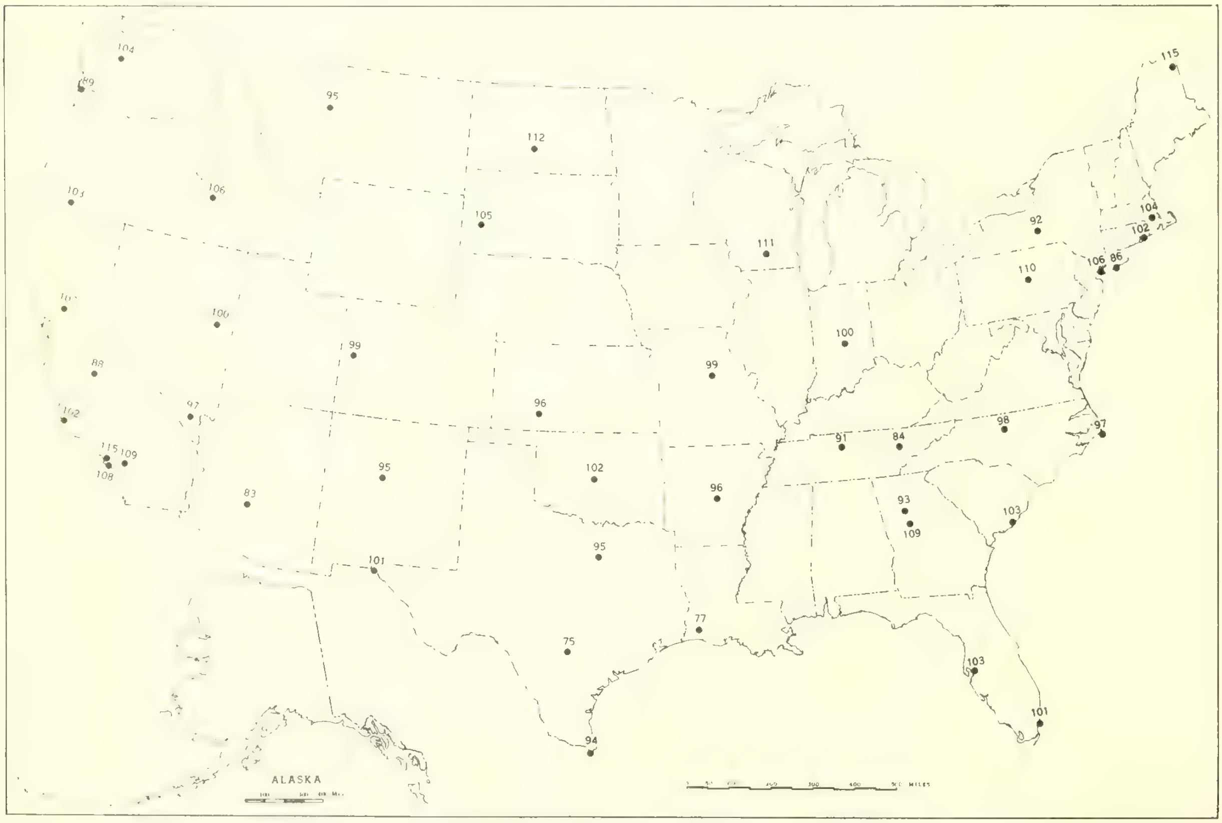


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, October 1960.



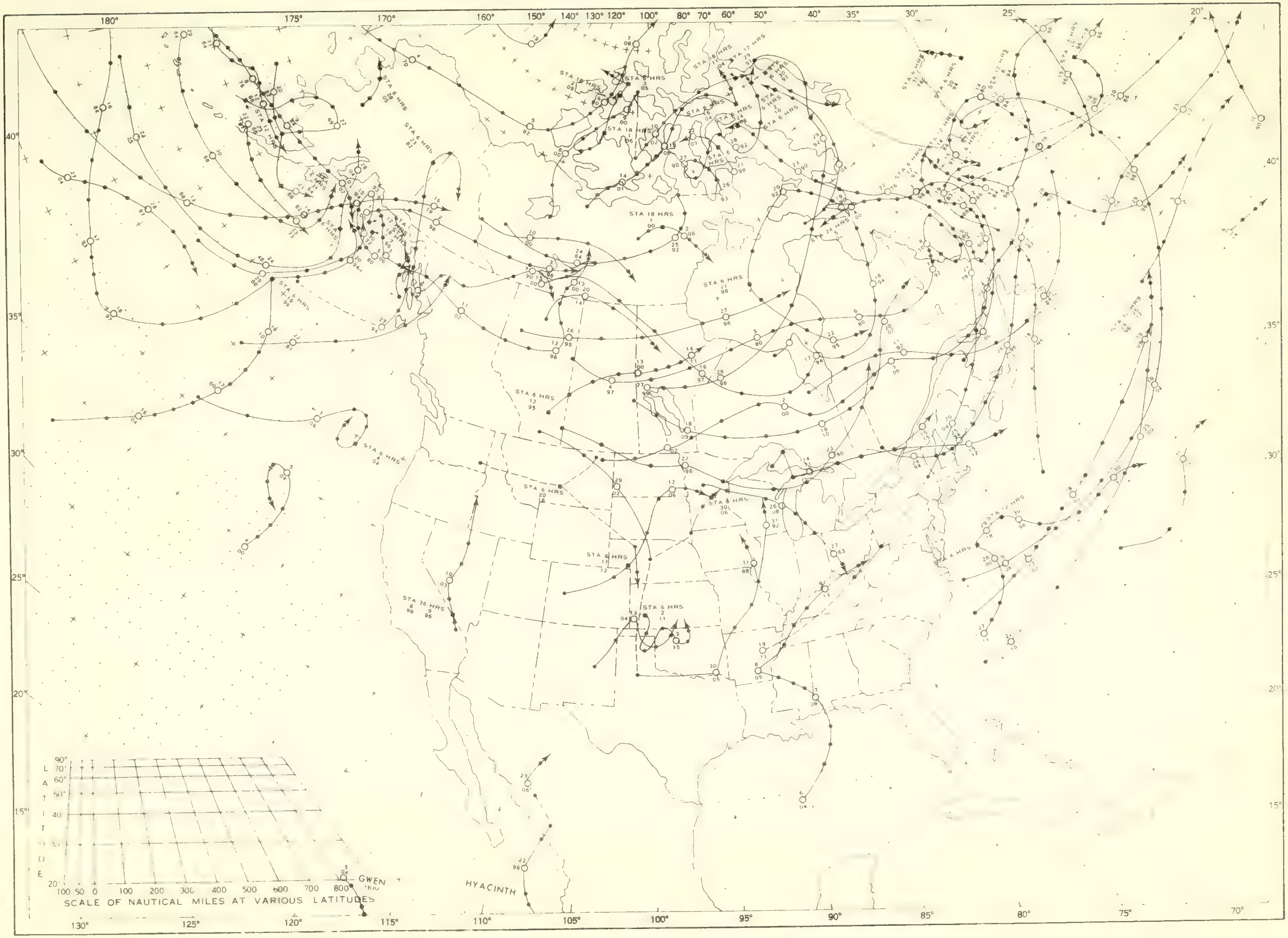
B. Percentage of Mean Daily Solar Radiation, October 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. $^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

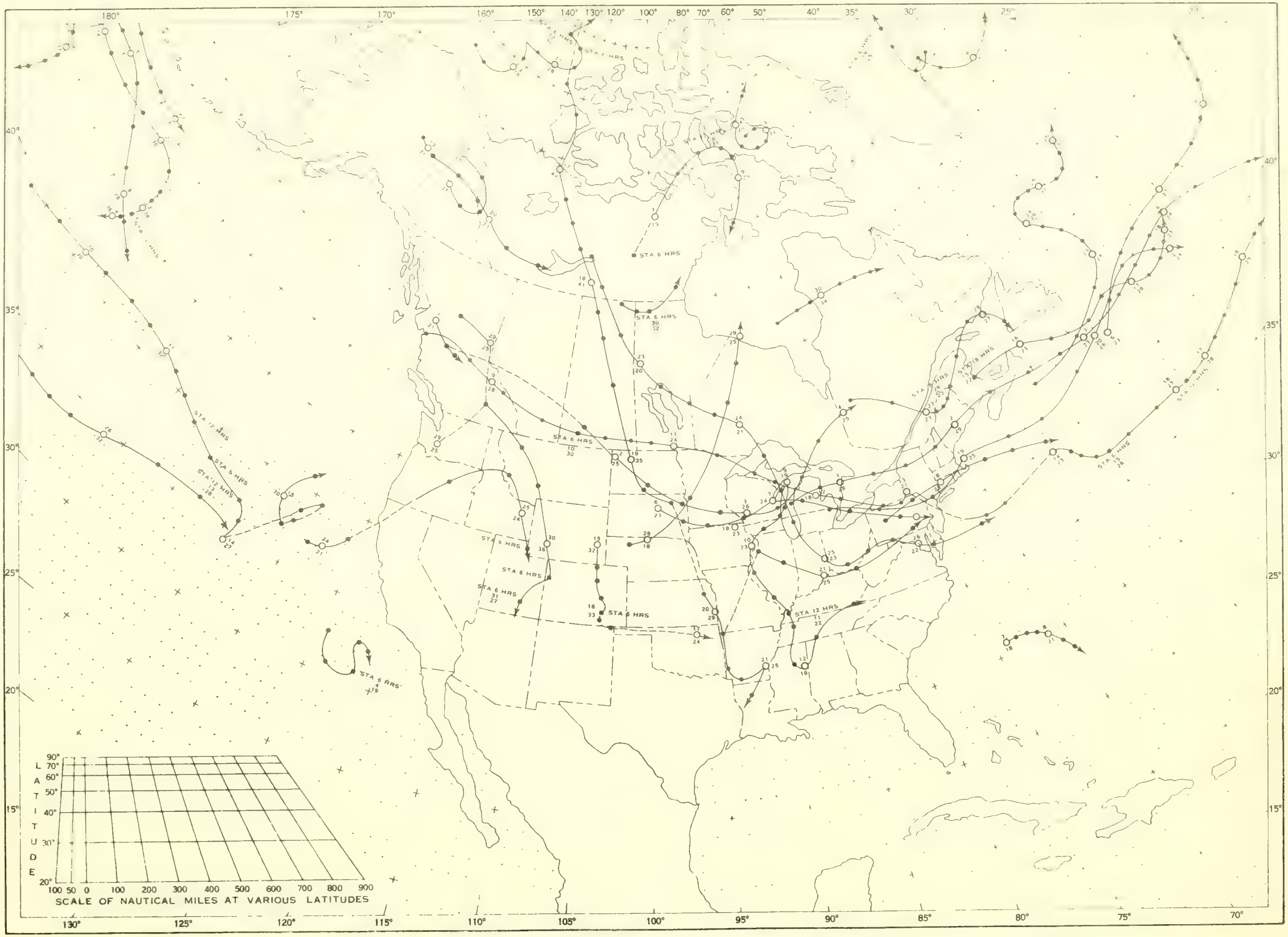
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart X. Tracks of Centers of Cyclones at Sea Level, October 1960.



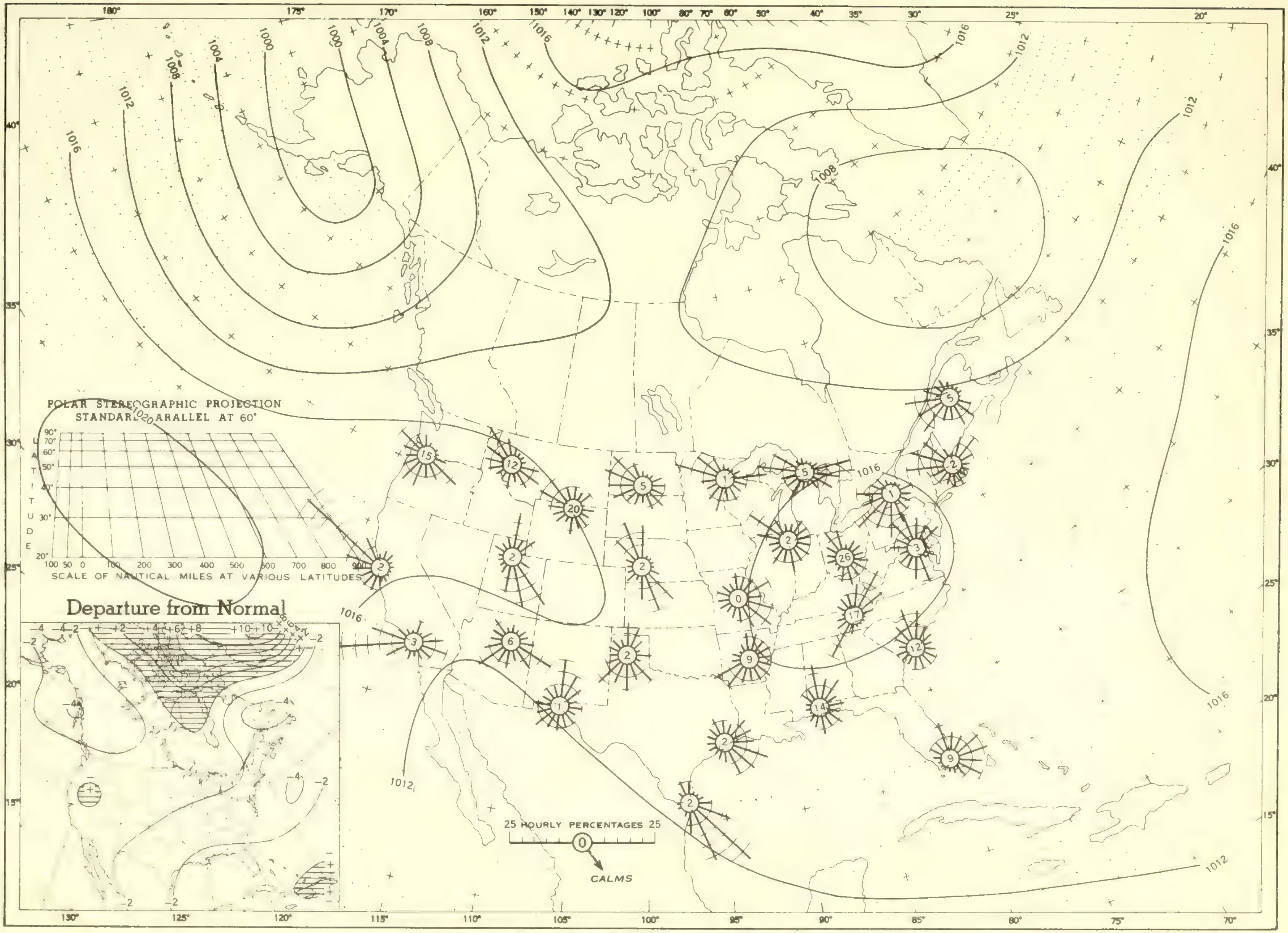
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, October 1960



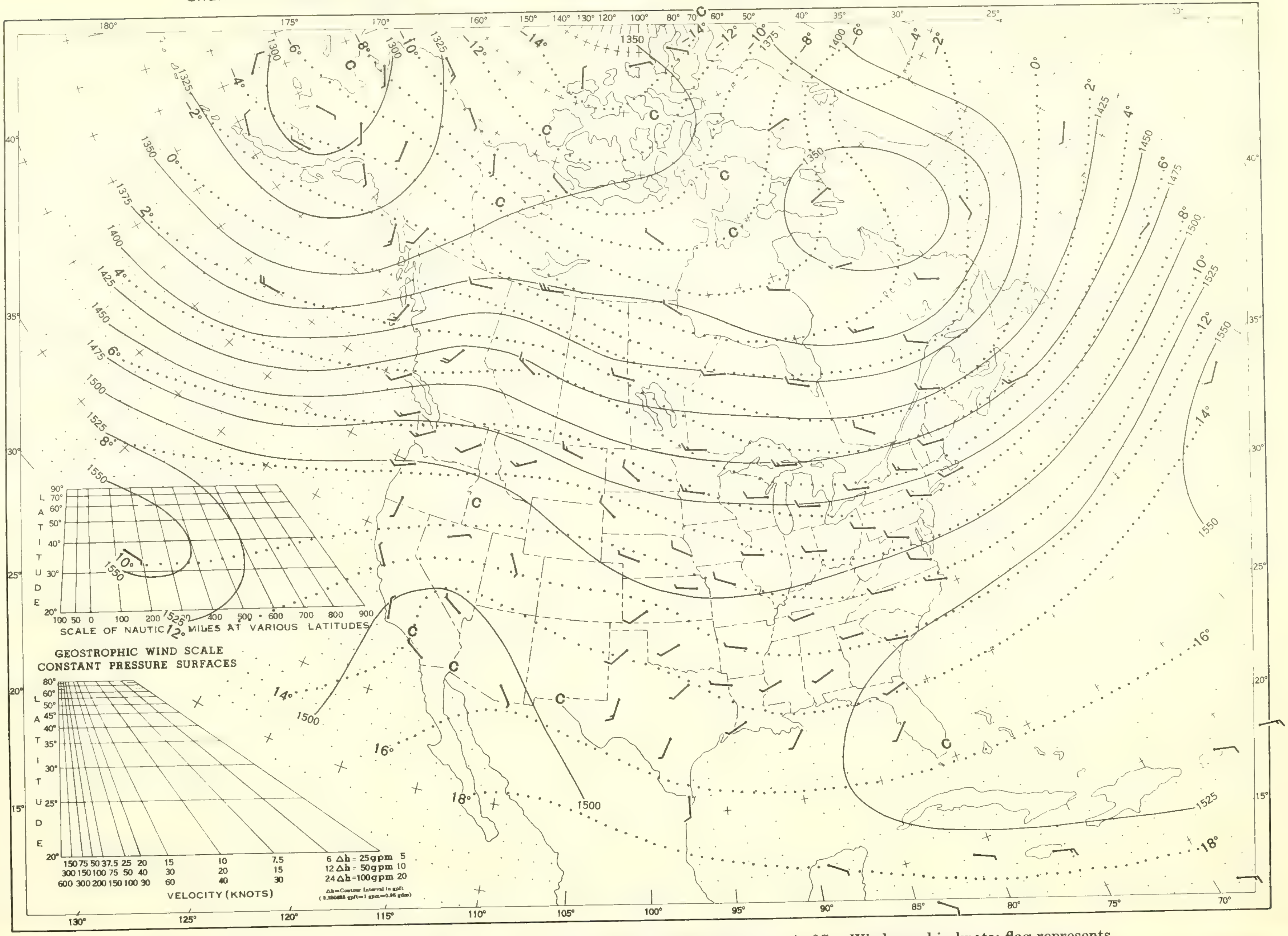
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, October 1960. Inset: Departure of Average Pressure (mb.) from Normal, October 1960.



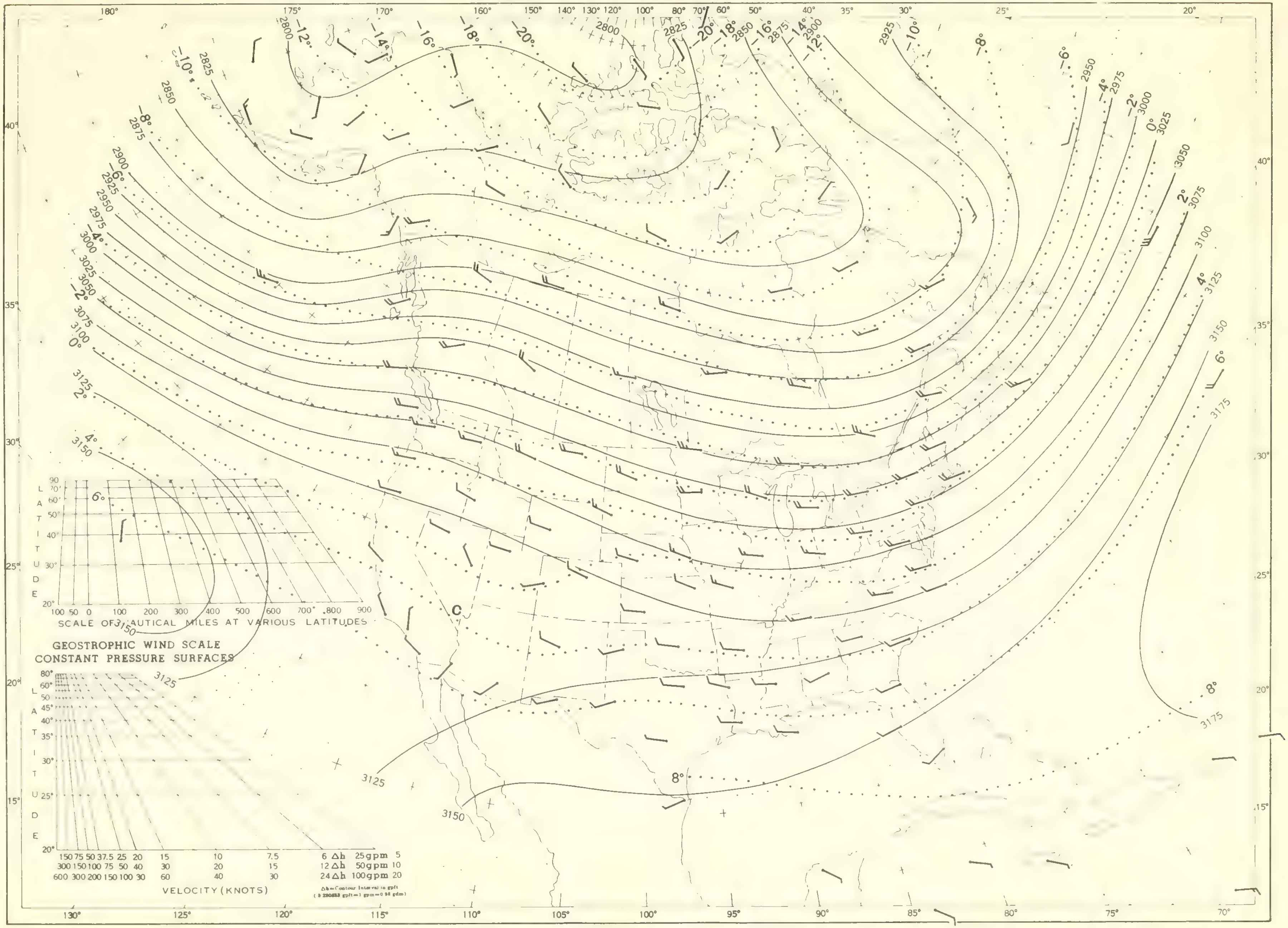
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, October 1960. Average Height and Temperature, and Resultant Winds.



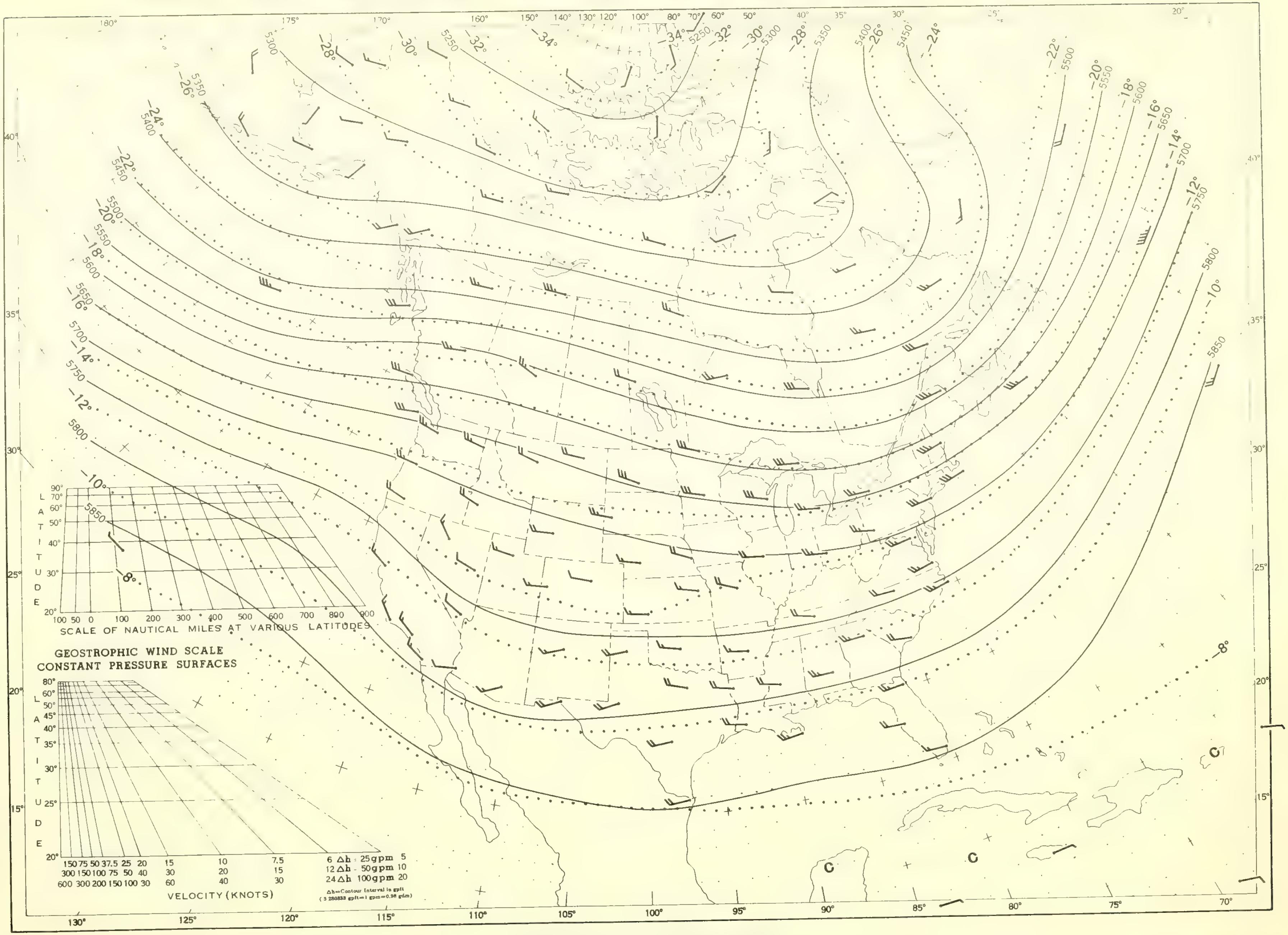
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, October 1960. Average Height and Temperature, and Resultant Winds.



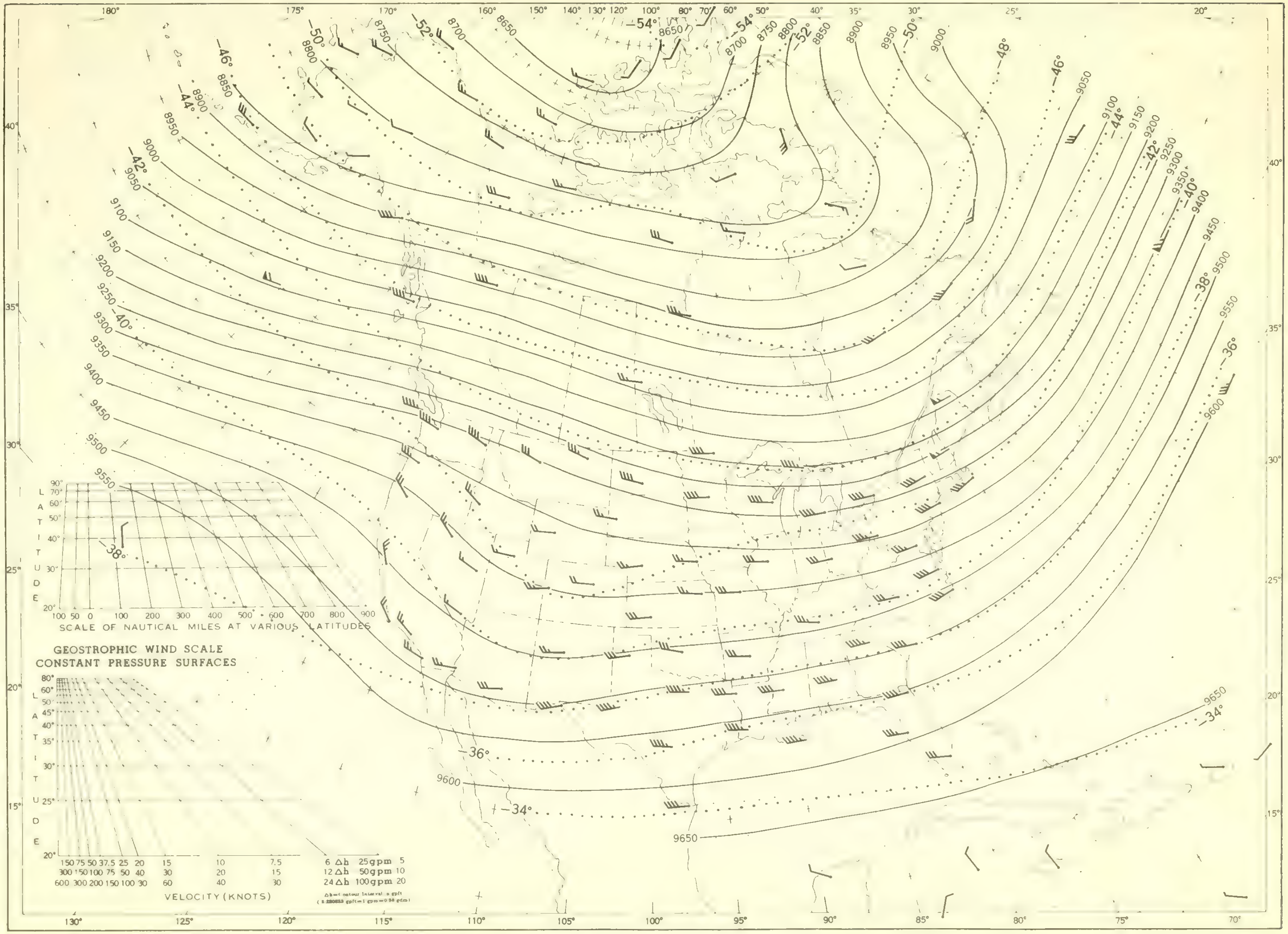
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, October 1960. Average Height and Temperature, and Resultant Winds.



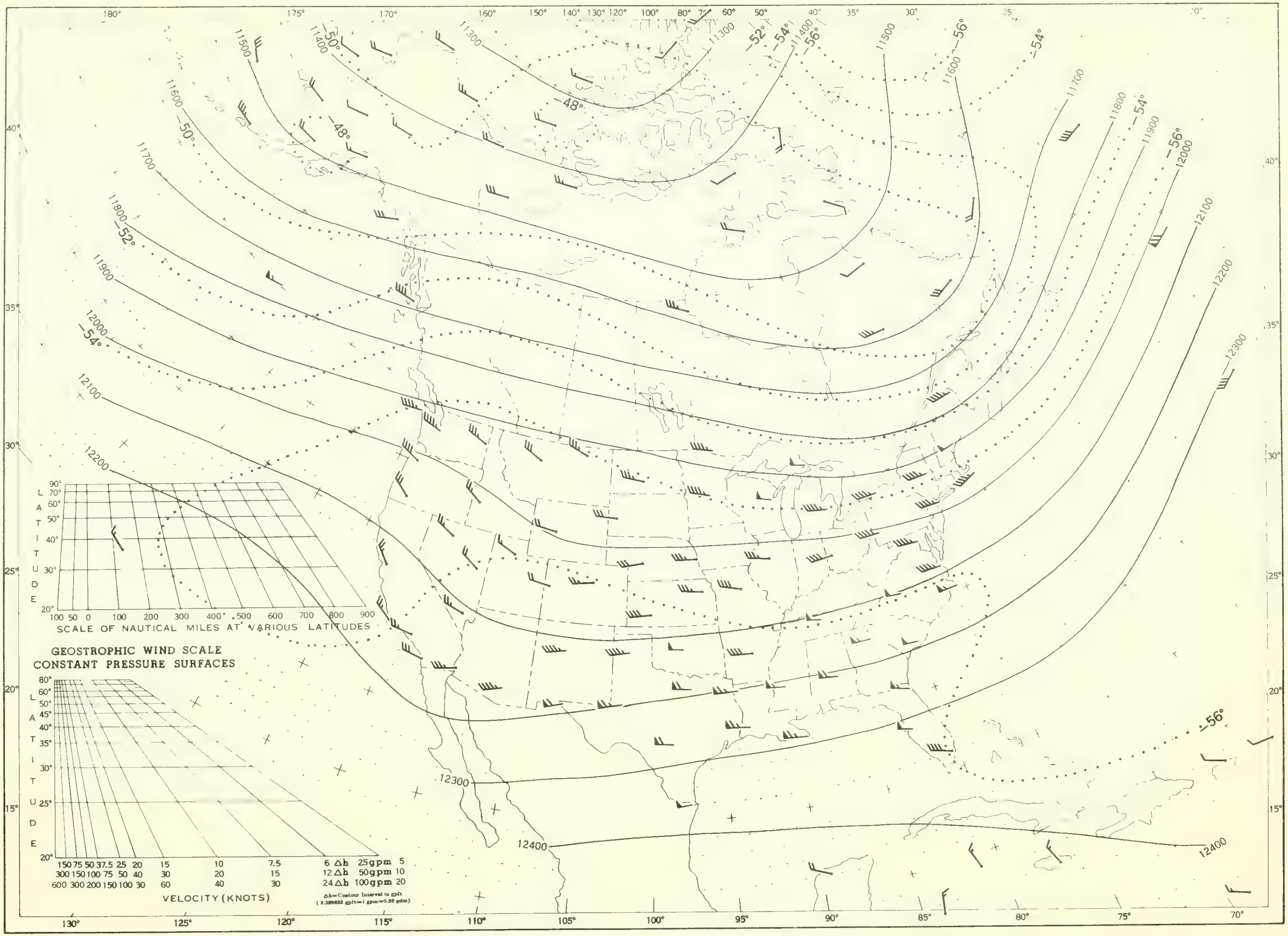
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, October 1960. Average Height and Temperature, and Resultant Winds.



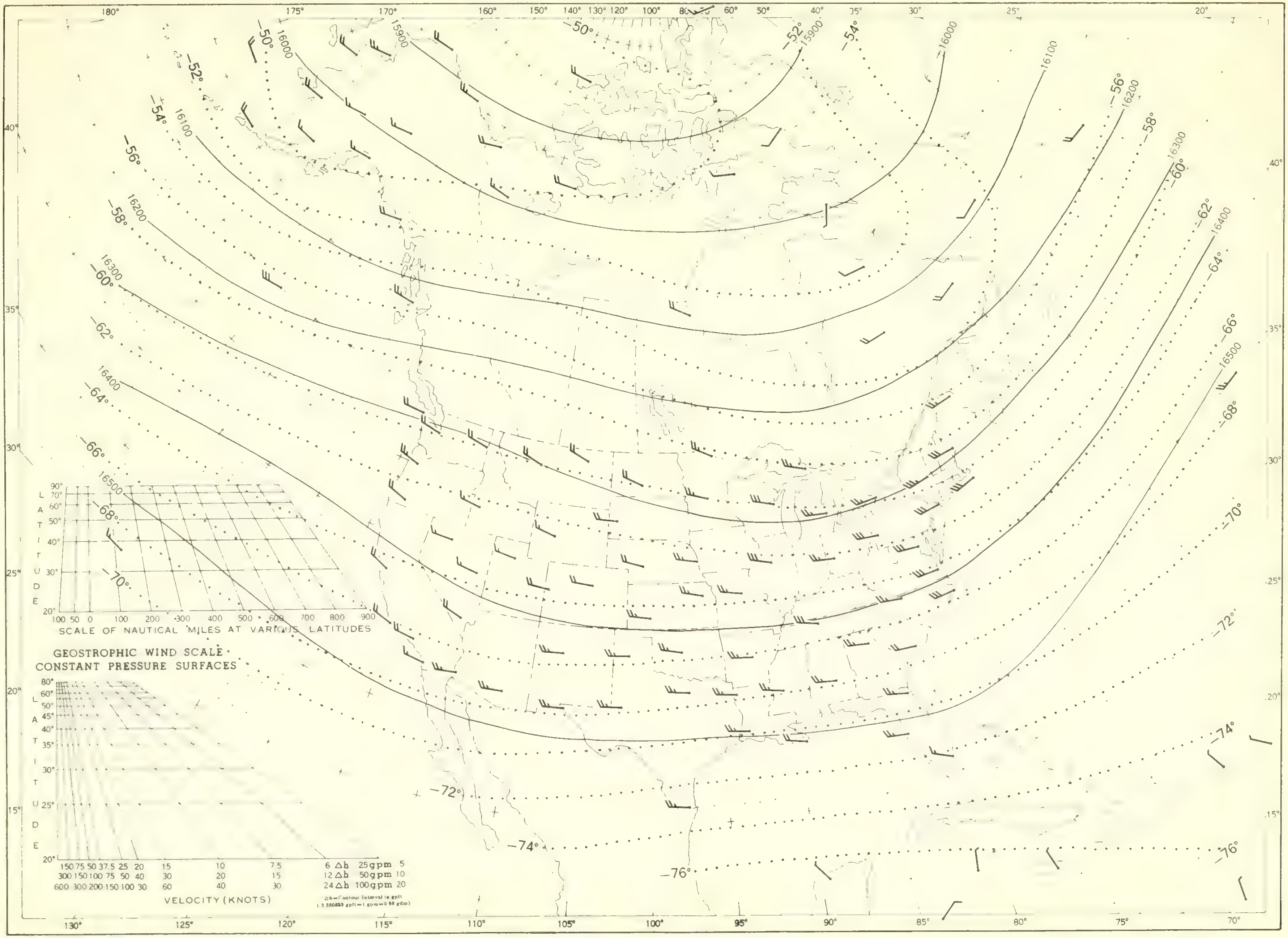
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, October 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, October 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

NOVEMBER 1960
Volume 11 No. 11

ASHEVILLE: 1961

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 11

NOVEMBER 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

Temperatures averaged above normal, except slightly below in California. Precipitation was much heavier than usual in most of the Far West and upper Mississippi Valley, but well below normal in parts of the Southeast, western Great Plains, and Far Southwest. Severe local storms occurred in many sections of the midcontinent area on the 15th, and the season's first blizzard in the Great Plains occurred on the 27th and 28th.

TEMPERATURE. --In general the first half of the month was cooler than normal. The coolest period, particularly in the East, was on the 7th and 8th when minimum temperatures fell to subfreezing levels for the first time of the season at most coastal stations from southern New England to South Carolina and scattered light frost was reported in northern and northwestern interior sections of Florida. On the 8th the lowest temperatures on record for so early in the season were recorded at a number of stations, including 23° at Raleigh, N. C., 22° at Harrisburg, Pa., and Columbia, S. C., and 15° at Hartford, Conn. During another cold spell in the midcontinent area on the 9th to the 11th, minima fell below zero at some extreme northern stations and freezing extended to central portions of Texas and Alabama. Shallow lakes in extreme Northern interior areas began to freeze over the second week.

During the second half of the month unusually mild temperatures prevailed over virtually the entire country until the last few days when a change in the circulation again brought below normal temperatures to most of the Nation. Southerly winds preceding a cold front that moved across the eastern half of the country during the closing days raised temperatures to record high levels for so late in the season at many stations from the northern Great Plains into the Southeast, ranging from 71° and 77° at Bismarck, N. Dak., and Goodland, Kans., respectively on the 25th to 81° at Macon, Ga., on the 28th and 76° at Norfolk, Va., on the 29th. The passage of the cold front brought a temperature drop of 34° in 11 hours at Milwaukee, Wis., on the 28th, and at Huron, S. Dak., the temperature dropped to -15° on the 30th, the lowest temperature there for November since 1897.

PRECIPITATION. --The most extensive area of above normal precipitation for the month included the Pacific States, Nevada, Idaho, Utah, western portions of Montana and Wyoming, and northwestern Arizona. California received from two to six times the normal amounts for November. Much of the precipitation in southern California fell during the 4th to the 6th and was produced by a storm off the coast, but heaviest amounts in northern portions of the State fell during the second week. Moderate to heavy amounts fell at intervals during the last 3 weeks along the north Pacific coast. Rain on the 3d at Sacramento ended a period of 162 days without measurable rain, but 14 days with measurable rain tied the record there for most days with measurable rain in November. Fresno measured 2.75 inches for the month, the most for November since 1909. Ely, Nev., had 1.82 inches, the greatest amount for November on record. Heavy rains in western Oregon near the end of the month caused damaging floods and forced a number of people to evacuate their homes. At the end of the month reservoirs in Nevada, nearly empty after 2 years of drought, were beginning to refill.

Heavy precipitation fell in Wisconsin and areas of nearby States the first week, the lower Ohio and middle Mississippi Valley the second week, southeast Texas and portions of the middle Mississippi Valley the third week, and northern portions of Mississippi and Alabama the fourth week.

The month was unusually dry in a large area including portions of the upper Mississippi Valley, the central Great Plains, and parts of the Far Southwest. Yuma, Ariz., had no measurable precipitation for the third consecutive month, and a number of stations in the Texas Panhandle had no measurable amounts for November. The month was also very dry in the South Atlantic Coastal States and along the central Gulf coast. Lakeland and Tampa, Fla., had only a trace of precipitation for the month; Augusta, Ga., had only 0.09 inch for the month for the driest November since 1870; and New Orleans, La., had only 0.24 inch which was less than 10 percent of normal.

SNOWFALL. --Snow fell in the Sierra Nevada and Cascade Mountains at rather frequent intervals, and by the end of the month depths in the Cascades ranged up to 50 or 60 inches at elevations above 3,000 feet. Moderate to heavy falls were measured in the central Rocky Mountain region during the second week, and a few inches fell in portions of the North Central Interior on several occasions during the first half of the month. The main snowfall in the North Central Interior, however, was during a major storm with blizzard conditions on the 27th to the 29th; falls of 4 to 8 inches were measured in South Dakota, up to 9 inches in western Nebraska, 8 to 14 inches in northern portions of Minnesota, Wisconsin and Michigan, and 6 to 8 inches on the western slopes of the Appalachians in Pennsylvania and West Virginia.

SEVERE STORMS. -- The storm in the North Central Interior on the 27th to the 29th caused considerable damage. In South Dakota glaze disrupted communication lines on the 27th and 4 to 8 inches of snowfall, drifted by winds up to 60 m. p. h., reduced visibility to zero at times, blocked roads, and forced schools to close. On the 28th high winds which reached speeds of 72 m. p. h. at Duluth, Minn., caused considerable damage to property along the north shore of Lake Superior.

Thunderstorms with high winds and some with hail caused local damage in the Mississippi Valley on the 15th, and tornadoes were reported in Missouri and Wisconsin.

CONDENSED CLIMATOLOGICAL SUMMARY

NOVEMBER 1960

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Fairhope	87	18	Valley Head	13	9	Bethlehem	4.56	Mobile WB Airport	0.25
Arizona	Yuma WB AP	93	1	2 Stations	-4	28	Signal 13SW	2.66	27 Stations	.00
Arkansas	Dumas 1ESE	85	15	Gilbert	13	11	Osceola	5.68	Greenwood	.45
California	Indio US Date Garden	93	1	2 Stations	-4	27+	Honey Dew 2WSW	22.80	El Centro 2SSW	.03
Colorado	Holyoke	79	25	Frazer	-25	29	Wolf Creek Pass 4W	2.96	4 Stations	T
Connecticut	2 Stations	68	16+	Coventry	8	8	Wolcott Reservoir	5.04	Cream Hill	2.37
Delaware	Lewes 1SW	74	16	Milford 3WNW	20	8	Wilmgton NCastle WB AP	2.04	Selbyville	1.40
Florida	2 Stations	91	17+	Mayo 5NW	29	8	Dry Torgugas	4.23	11 Stations	.00
Georgia	Quitman	89	17	Commerce 1NE	14	8	Flat Top	5.91	Cairo 2NNW	.06
Idaho	Swan Falls PH	68	25	Sun Valley	-14	28	Sandpoint Exp. Sta.	9.71	Chilly Barton Flat	.21
Illinois	3 Stations	78	15+	Aledo	11	30	Chester	5.53	Warsaw	.38
Indiana	Jeffersonville	77	15	Culver Exp. Farm	13	30	Mount Vernon	4.11	Whiting	.51
Iowa	Onawa	77	25	Iowa Falls	-1	30	Williamsburg	3.91	Lake City	T
Kansas	Aetna 2S	81	14+	McDonald	5	29	Parsons	1.87	Several Stations	T
Kentucky	Williamsburg 2	81	23	Benton 2	13	11	Caneyville	5.59	Inez	.48
Louisiana	Several Stations	85	28+	Cotton Valley	23	11	Milam Texas 8E	8.21	Cocodrie	.05
Maine	2 Stations	65	16	Squa Pan Dam	9	8	Bar Harbor	6.50	Gilead	1.58
Maryland	3 Stations	76	16+	Oakland 1SE	10	8	Princess Anne	4.35	Salisbury FAA Airport	.65
Massachusetts	6 Stations	67	17+	2 Stations	10	8	Clinton	3.90	Salem C G Air Station	1.81
Michigan	Holland	69	28	do	11	30+	Baldwin State Forest	7.49	Mount Clemens AF Base	.74
Minnesota	Madison	71	25	Bemidji Airport	-15	30	Grand Portage R. S.	3.12	Red Lake Falls	.20
Mississippi	Natchez	85	28	Houston 2NE	18	30+	Onward	5.60	Biloxi City	.00
Missouri	4 Stations	80	15+	3 Stations	9	30+	Bernie	6.59	Coloma	.05
Montana	Kirby 1S	78	25	Opheim 10N	-30	29	Heron 2NW	7.52	Plevna	.00
Nebraska	4 Stations	80	26+	Ellsmere 9ENE	-10	30	Atkinson	1.87	Geneva	.02
Nevada	Pahrump	87	1	Ruth	-2	28	Mt Rose Highway Sta.	7.72	Sand Pass	.71
New Hampshire	2 Stations	67	16	3 Stations	7	8	Conway 1N	4.28	Dixville Notch	1.78
New Jersey	3 Stations	72	16	Layton 3NW	13	8	Jersey City	3.34	High Point Park	1.20
New Mexico	Artesia	85	2	Red River	-3	29	Penasco RS	1.06	40 Stations	.00
New York	Fredonia	70	15	Salem	9	8	Hooker	4.37	Canandaigua 3S	.34
North Carolina	3 Stations	80	16	Celo 2S	11	8	Coweeta 8	5.40	Siler City	.36
North Dakota	Watford City 14S	75	25	Medora 3NNE	-25	29	Fargo WB Airport	1.63	Breien	.03
Ohio	2 Stations	77	16+	Tom Jenkins Dam	13	25+	Chardon	3.79	2 Stations	1.02
Oklahoma	Hugo	88	15	2 Stations	12	29+	Carnasaw Tower	3.40	Numerous Stations	.00
Oregon	2 Stations	75	10+	Valley Falls	-9	28	Valsetz	32.76	Rome 1N	.68
Pennsylvania	Waynesburg	73	15	2 Stations	10	8	Corry	3.36	Meyersdale	.73
Puerto Rico	Juana Diaz Camp	99	1	Guineo Reservoir	55	6	Maricao Fish Hatchery	15.94	Santa Isabel 3NW	1.32
Rhode Island	Providence WB AP	64	16	Kingston	14	8	Block Island WB AP	3.84	Providence WB AP	2.77
South Carolina	Bamberg	84	16	2 Stations	19	8	Sassafras Mountain	2.93	Aiken	.15
South Dakota	2 Stations	80	25	Andover 7N	-21	30	Pukwana 3W	2.14	Hereford	T
Tennessee	Brownsville	82	5	Waynesboro	14	11	Haw Knob	5.99	Odomville	1.37
Texas	Rio Grande City 2ESE	95	3	2 Stations	13	29	Madisonville	10.48	Numerous Stations	.00
Utah	3 Stations	79	4+	Scofield Dam	-10	29	Silver Lake Brighton	6.10	Piute Dam	.05
Vermont	Readsboro 1SSE	69	17	Somerset	6	8	Whitingham 3W	3.67	Saint Albans Bay	.70
Virginia	3 Stations	78	29+	Burkes Garden	10	8	Rose Hill	3.65	Copper Hill	.26
Washington	Clearwater	72	5	Winthrop 1WSW	-5	27	Cougar 6E	25.46	Sunnyside	.44
West Virginia	Williamson	81	16	Canaan Valley	-2	8	Pickens 1	4.07	Martinsburg FAA AP	.41
Wisconsin	2 Stations	68	15	Grantsburg FAA AP	-4	30	Gurney	3.93	Westby 2NE	.55
Wyoming	Yoder	75	25	Bondurant 3NW	-25	29	Alpine 2S	3.57	Colony	.07

And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	With thunderstorms	Snow, Sleet: Total	Max depth on ground	Wind: Average hourly speed	Prevailing direction	Fastest mile: Speed	Direction	Date	No of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.		#		°F.	%	In.	In.	In.			In.	In.	M p.h.		M p.h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	996.6	1022.5	66	41	53.2	1.2	76	28+	28	30	0	6	44	77	3.24	-0.74	1.68	8	2	0.0	0	6.4	NNW	26	SE	9	10	9	11	5.5	63
Huntsville	605	998.7	1022.3	64	38	51.0	----	76	15	27	12+	0	10	40	72	3.71	----	1.51	8	1	.0	0	4.7	SE	*21	W	28	9	9	12	5.4	--
Mobile	211	1019.2	1021.7	71	48	59.7	1.0	81	16	35	30	0	0	49	74	.25	-3.82	.10	4	0	.0	0	9.3	N	*29	N	30	13	6	11	5.0	--
Montgomery	195	1013.7	1022.1	68	43	55.3	.1	77	28	30	8	0	3	45	73	1.67	-2.28	.76	5	0	.0	0	7.4	N	21	NW	29+	11	6	13	5.3	59
ALASKA																																
Anchorage	90	997.0	1002.4	28	17	22.5	.2	46	4+	-4	23	0	28	15	72	.56	-.44	.39	7	0	9.6	8	7.7	NNE	*23	SE	3	4	2	24	8.0	30
Annette	110	1003.4	1007.5	45	37	41.1	.4	52	5+	29	26+	0	4	35	80	8.01	-2.21	1.87	26	0	8.1	2	11.7	ESE	*35	E	22	1	1	28	9.2	--
Barrow	22	1016.6	1017.2	-5	-15	-9.6	-10.3	8	6	-26	24	0	30	-20	61	.02	-.25	.01	2	0	.2	9	12.6	ESE	*31	WSW	28	b4	b4	b4	----	--
Barter Island	39	1014.2	1016.2	-1	-12	-6.8	-7.3	17	6	-30	30	0	30	-16	66	.04	-.55	.02	3	0	.4	9	14.5	ENE	*44	ENE	3	a8	a3	a14	----	--
Bethel	125	1001.7	1003.3	24	9	16.6	-.4	43	7	-18	29	0	27	12	82	1.42	.45	.28	17	0	15.3	11	13.3	S	*37	S	30	4	3	23	8.0	--
Cold Bay	90	998.0	1001.7	38	27	32.8	-1.9	48	6	11	21	0	24	29	81	8.94	5.12	2.53	25	0	16.3	4	22.4	NNW	*58	WSW	11+	0	8	22	8.6	--
Cordova	40	998.6	1000.4	38	26	31.7	.6	45	17	6	25	0	23	29	87	2.99	-7.56	.70	15	0	T	T	4.0	E	*29	ESE	3	3	2	25	8.6	--
Fairbanks	436	991.2	1009.5	7	-9	-1.0	-4.1	38	3	-38	25	0	30	-8	67	.41	-.22	.20	9	0	10.1	12	4.1	N	*12	NNW	5+	7	3	20	7.2	--
Juneau	17	1004.4	1005.4	38	30	34.3	1.2	49	5	16	26	0	20	30	87	4.97	-.95	1.33	22	0	7.0	2	10.1	ESE	*37	ESE	5	2	2	26	8.9	20
King Salmon	44	999.7	1001.6	27	15	20.9	-1.2	46	7	-17	22	0	26	15	77	1.59	.27	.46	17	0	11.4	7	13.7	N	*52	E	7	5	2	23	7.8	--
Kotzebue	10	1008.5	1009.1	11	2	6.8	-.7	27	7	-21	29	0	30	-1	70	.44	.01	.07	15	0	11.6	7	15.2	E	*32	E	25+	5	1	24	8.1	--
McGrath	334	993.9	1007.3	9	-3	3.1	-2.4	33	7	-35	24	0	30	-4	72	.75	-.34	.20	14	0	12.2	11	3.7	E	*17	E	7	5	3	22	7.8	--
Nome	13	1004.7	1005.4	19	8	13.4	-3.4	37	8+	-16	28+	0	30	9	77	.59	-.55	.15	14	0	6.1	6	12.8	ENE	*40	E	30	3	6	21	7.8	24
Shemya	122	1004.1	1007.5	37	29	33.0	----	46	27	24	30	0	29	29	83	1.64	----	.39	23	0	9.1	2	23.0	NNW	*66	W	29	0	12	18	8.1	--
St. Paul Island	22	999.3	1000.4	36	26	30.9	-2.9	43	8+	12	20	0	25	27	82	3.21	.62	.88	25	0	14.3	10	----	---	--	---	--	1	8	21	8.4	--
Yakutat	28	1001.0	1002.1	39	29	33.9	.2	49	5	12	25	0	18	30	86	14.70	-.76	3.02	22	0	23.0	16	7.5	ENE	*36	SE	15	2	4	24	8.7	--
ARIZONA																																
Flagstaff	6993	------	------	52	22	36.8	1.0	66	2+	1	28	0	26	--	--	1.27	.38	.46	4	0	.8	1	----	--	-	---		17	4	9	4.1	--
Phoenix	1109	977.0	1016.5	73	48	60.5	2.1	86	3	36	28	0	0	38	46	T	-.47	T	0	0	.0	0	5.2	E	*29	SSW	26	16	8	6	3.5	89
Prescott	5014	849.0	1019.0	62	31	46.5	.9	77	1	21	28	0	20	28	55	.34	-.28	.18	5	1	.4	T	6.3	SSW	40	SW	27	18	4	8	3.5	72
Tucson	2584	927.2	1015.9	74	45	59.2	1.0	83	3+	27	28	0	2	30	38	.07	-.69	.04	3	0	.0	0	7.9	SE	30	SW	27	13	10	7	4.2	79
Winslow	4880	854.4	1019.7	61	29	44.9	2.0	74	3	16	28	0	24	24	26	.17	-.26	.11	4	1	.0	0	8.2	SW	*35	SSW	27	17	4	9	3.7	--
Yuma	199	1011.2	1016.6	79	51	64.8	.6	93	1	41	28	2	0	34	37	T	-.14	T	0	0	.0	0	8.0	N	26	W	26	17	3	10	3.7	77
ARKANSAS																																
Fort Smith	458	1003.7	1021.1	65	39	52.0	1.5	79	15	23	11+	0	8	40	68	.61	-2.41	.29	6	1	.0	0	7.2	ENE	32	S	15	13	6	11	4.8	61
Little Rock	257	1007.5	1021.8	63	38	50.7	-.8	78	14	22	11	0	7	41	74	1.77	-2.15	1.18	4	2	.0	0	7.3	WSW	36	SW	15	12	6	12	5.3	51
Texarkana	361	------	1021.2	66	45	55.5	.7	78	2	27	11	0	4	46	72	.99	-3.34	.49	7	2	.0	0	6.9	SSW	--	---	--	--	--	--	----	--
CALIFORNIA																																
Bakersfield	494	1001.7	1020.0	64	44	53.8	-2.4	82	2+	35	28	0	0	46	75	3.04	2.61	1.54	6	1	.0	0	4.6	NW	*21	E	5+	7	13	10	5.8	--
Bishop	4108	875.7	1018.3	59	29	43.9	-2.3	84	1	17	30	0	23	--	--	2.59	2.11	1.14	5	1	.0	0	----	---	--	---	--	12	8	10	4.7	--
Blue Canyon	5280	838.8	1016.9	47	35	40.8	-3.1	68	1	24	27	0	10	--	--	10.17	3.49	2.40	16	1	37.6	19	9.7	ENE	47	ENE	3	7	3	20	7.1	--
Burbank	699	991.5	1017.9	70	47	58.4	-1.5	79	22+	38	28	0	0	42	61	3.25	2.27	1.75	5	2	.0	0	5.3	S	*35	ENE	19	15	7	8	4.1	--
Eureka (U)	43	1015.6	1018.0	57	45	51.1	-.2	66	4	36	27	0	0	--	--	9.87	5.23	2.29	20	0	.0	0	7.4	① SE	37	N	3	3	3	24	8.4	39
Fresno	331	1007.1	1019.3	62	41	51.6	-1.9	80	1	34	28	0	0	45	79	2.75	2.00	.71	7	0	.0	0	5.7	ESE	26	S	5	10	6	14	5.7	56
Long Beach	34	1017.3	1018.5	70	48	58.6	----	81	17	37	22	0	0	47	70	1.33	----	.74	6	0	.0	0	5.2	WNW	*28	SE	26	10	10	10	5.1	--
Los Angeles (U)	312	------	------	69	52	60.3	-1.8	78	17	43	27	0	0	48	69	2.40	1.37	.93	5	2	.0	0	6.3	W	29	S	5	15	7	8	3.9	75
Los Angeles	99	1014.2	1018.0	66	50	58.2	-1.1	77	19	43	28	0	0	49	74	2.67	1.57	1.34	6	2	.0	0	6.6	E	*28	WSW	26	14	8	8	4.7	--
Mt. Shasta (R)	3544	893.0	1018.6	47	31	39.3	-2.2	65	1	21	28	0	19	--	--	8.39	4.56	1.93	14	1	28.1	11	----	---	--	---	-	9	4	17	6.6	--
Oakland	3	1018.6	1019.1	61	46	53.4	-.4	74	1	39	27	0	0	46	77	4.24	2.29	1.79	12	0	.0	0	8.3	E	*33	SSE	25	6	9	15	6.8	--
Point Arguello(R)	367	1004.4	1017.8	62	44	53.0	----	70	16	37	23+	0	0	--	--	3.81	----	1.29	9	1	.0	0	7.9	---	*28	SSE	26	10	11	9	5.1	--
Red Bluff	341	1005.8	1018.7	61	44	52.3	-2.2	84	1	32	28+	0	2	39	67	6.16	3.89	2.25	14	2	.0	0	11.0	N	46	SE	25	8	1	21	7.1	55
Sacramento	17	1018.0	1018.9	62	44	53.1	.0	87	1	34	28+	0	0	46	81	4.25	2.75	1.46	12	0	.0	0	5.7	SE	28	S	13	7	5	18	7.1	55
Sandberg (R)	4517	863.9	1018.0	52	39	45.8	-3.7	78	1	27	27	0	2	--	--	3.91	3.21	2.28	7	1	2.5	2	13.8	S	*32	SSE	5	18	5	7	3.7	--
San Diego	19	1014.2	1017.5	69	52	60.5	-.3	77	17	44	28	0	0	50	71	1.01	.18	.53	5	0	.0	0	5.6	NE	33	SW	26	13	7	10	4.4	63
San Francisco (U)	52	------	------	61	50	55.5	-1.7	73	1	46	27	0	0	--	--	3.35	1.08	1.33	14	0	.0	0	6.4	W	25	W	20	--	--	--	----	50
San Francisco	8	1018.6	1019.2	61	47	53.8	-.6	75	1	39	27	0	0	48	81	4.15	2.53	1.63	13	1	.0	0	8.7	WNW	39	SSW	12	7	8	15	6.6	--
Santa Maria	238	1009.8	1018.8	65	42	53.4	-3.0	75	17	34	28	0	0	45	75	2.83	1.89	.99	6	1	.0	0	6.8	WNW	*29	WSW	26	14	6	10	4.6	--
COLORADO																																
Alamosa	7536	773.1	1022.7	51	14	32.7	3.2	61	3+	2	29	0	29	--	--	.29	-.09	.23	2	0	.3	T	----	---	--	--	--	15	12	3	3.8	-
Colorado Springs	6173	811.0	1019.9	53	24	38.7	-.4	68	26	10	28	0	28	16	48	.23	-.12	.21	2	0	2.0	1	7.8	NNE	*33	W	16	15	8	7	4.0	-
Denver	5292	837.8	1018.6	54	25	39.5	.2	72	25	7	29	0	25	18	51	.49	-.21	.28	2	0	5.1	3	7.8	SSW	37	W	15	16	7	7	4.1	74
Grand Junction	4849	862.2	1021.0	54	29	41.5	2.9	66	3+	17	29	0	20	21	47	.39	-.16	.19	3	0	2.2	1	8.1	ESE	38	W	7	11	9	10	5.0	73
Pueblo	4639	857.4	1018.6	58	26	42.2	2.9	74	25	12	29	0	27	22	52	.27	-.20	.27	2	0	3.4	3	6.9	WNW	49	N	22	14	10	6	4.1	84
CONNECTICUT																																
Bridgeport	7	1017.8	1018.7	55	39	47.0	3.5	63	2+	27	8	0	5	36	69	3.58	-.01	2.13	4	0	.0	0	10.2	WNW	29	WSW	29	10	8	12	5.6	
Hartford	169	1011.2	1017.4	54	32	43.0	1.7	66	16	15	8	0	15	32	70	3.88	.40	1.60	3	2	.0	0	7.7	S	30	W	30	10	10	10	6.0	63
New Haven	133	1017.9	------	54	37	45.2	2.3	62	1	20	8	0	12	--	--	2.52	-1.42	1.08	4	0	.0	0	-	-	26	W	17	10	9	11	5.7	68
DELAWARE																																
Wilmington	78	1015.6	1019.0	57	35	45.9	.4	70	16	22	8	0	10	37	73	2.04	-1.29	1.01	9	0	T	T	7.9	WNW	24	WNW	30	11	7	12	5.9	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	59	40	49.4	1.4	72	16	29	8	0	3	--	--	1.00	-1.82	.46	7	--	---	--	----	---	--	--	--	--	--	--	----	--
Wash. Nat'l. AP	14	1015.5	1020.0	58	39	48.5	.8	72	16	28	8	0	7	36	64	.99	-1.74	.38	7	0	T	0	8.1	S	32	NW	3	10	8	12	5.5	64
FLORIDA																																
Apalachicola (U)	13	1018.5	------	71	56	63.2	1.8	79	29	40	30	0	0	--	--	.20	-2.25	.12	2	0	.0	0	7.0	---	25	N	30	14	8	8	4.4	77
Daytona Beach	31	1019.0	1020.9	77	57	67.1	2.0	83	18	48	30+	0	0	59	80	.53	-1.74	.40	0	0	.0	0	7.1	NNW	*23	N	7	13	10	7	4.8	-
Fort Myers	15	1018.1	------	83	63	72.7	3.5	87	11	53	8	0	0	--	--	2.02	.81	3.34	1	0	.0	0	7.3	---	*20	ENE	22+	13	14	3	3.9	
Jacksonville	24	1019.7	1021.2	75	55	65.1	3.5	83	23+	42	7	0	0	56	77	.11	-1.51	.07	3	0	.0	0	7.9	NW	26	NW	18	10	7	13	5.3	67
Key West	5	1016.6	1017.7	81	73	76.8	2.2	85	18	66	8+	0	0	68	78	.65	-1.37	.33	7	1	.0	0	11.9	ENE	28	SW	1	11	15	4	4.3	75
Lakeland (U)	214	------	------	79	61	69.7	3.0	85	18+	48	8+	0	0	--	--	T	-1.39	T	0	0	.0	0	6.5	---	--	---	--	13	15	2	3.8	71
Miami	7	1016.7	1018.0	82	68	74.7	2.6	85	1	57	8	0	0	65	74	2.36	-.05	2.32	8	1	.0	0	[illegible]	E	23	N	30+	5	22	3	5.0	--
Miami Beach	5	------	------	80	72	75.9	1.9	85	1	64	8+	0	0	--	--	2.31	.03	1.29	5	--	.0	0	----	---	¢27	¢ E	15	¢12	¢16	¢2	¢1.[illegible]	¢73
Orlando	106	1015.5	1020.0	80	59	69.9	3.1	86	10	49	7	0	0	59	76	.30	-1.02	.26	3	0	.0	0	6.9	NNE	*21	E	15	11	15	4	4.6	--
Pensacola (U)	13	------	------	70	53	61.5	1.3	78	16	37	30	0	0	--	--	2.85	-.99	.93	9	1	.0	0	[illegible]	- -	18	N	30+	--	--	--	----	60
Tallahassee	64	1018.2	1021.0	72	51	61.4	2.6	82	16	38	30	0	0	52	79	4.12	1.60	4.09	3	0	.0	0	5.4	NNW	*16	NNW	29+	11	8	11	5.5	-
Tampa	19	1018.4	1020.1	81	60	70.2	3.5	86	28	46	30	0	0	59	73	T	-1.04	T	0	0	.0	0	10.0	N	*23	ENE	8+	14	12	4	3.9	85
West Palm Beach	15	1017.4	1018.5	82	68	75.0	3.3	84	29+	56	7	0	0	65	73	2.67	-.32	.96	17	6	.0	0	10.9	E	*27	NNE	30	5	18	7	5.7	--
GEORGIA																																
Athens	798	992.5	1022.0	64	40	51.9	-0.1	74	28+	27	12+	0	5	41	72	1.01	-2.01	.70	3	0	.0	0	6.8	NE	*23	NW	30	12	5	13	5.2	--
Atlanta	975	979.7	1022.3	64	41	52.6	.7	75	28	29	8	0	4	39	64	.89	-2.52	.56	9	0	.0	0	9.8	NW	*27	S	28	14	3	13	5.0	65
Augusta	143	1014.6	1021.5	69	40	54.4	.6	82	16	25	8	0	7	43	73	.09	-2.35	.04	4	0	.0	0	4.6	NW	*18	SW	29	13	3	14	5.2	
Columbus	385	1007.7	------	69	42	55.5	1.2	80	28	31	30	0	2	--	--	1.06	-1.80	.41	6	0	.0	0	6.8	---	*20	WNW	29	12	5	13	5.3	
Macon	356	1007.8	1021.8	69	43	55.7	-.3	81	28	32	30+	0	2	43	69	.48	-2.25	.25	5	0	.0	0	6.8	NNW	20	NW	30	12	4	14	5.2	59
Rome	637	998.4	------	64	35	49.2	-1.3	77	28	23	8	0	15	--	--	1.67	-2.09	.91	9	1	.0	0	----	---	-	---		[illegible]	7	10	5.0	
Savannah	48	1019.0	1021.8	71	47	59.3	1.8	82	16	34	8	0	0	51	77	.42	-1.09	.28	3	0	.0	0	7.6	NNE	20	N	7	12	6	12	5.1	66
Thomasville	283	------	------	73	51	62.1	2.6	83	28+	35	30	0	0	--	--	.45	-1.79	.23	5	0	.0	0	----	---	-	---			--		---	-

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature								No. of days				Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile			No. of days (sunrise to sunset)				
		ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
HAWAII																																
Hilo	31	1015.6	1016.9	79	65	72.4	-0.6	83	6+	61	20	0	0	65	81	14.93	2.54	4.00	29	0	0.0	0	8.9	WSW	*25	N	9	1	9	20	7.8	20
Honolulu	7	1016.9	1017.4	83	71	76.9	1.2	87	6+	65	6	0	0	63	65	.22	-1.57	.09	6	0	.0	0	12.9	ENE	38	NE	23	6	19	5	5.5	68
Lihue	115	1012.5	1017.6	82	70	76.1	2.5	84	13+	64	6	0	0	66	72	1.58	-2.66	.42	18	0	.0	0	14.8	NE	31	NE	28	5	16	9	6.0	51
IDAHO																																
Boise	2842	921.8	1020.1	50	31	40.6	1.0	67	25	21	28	0	20	31	70	1.82	.47	.44	15	0	2.1	1	9.0	SE	30	E	23	5	3	22	7.5	40
Idaho Falls 46W (R)	4933	849.0	1019.6	41	20	30.7	.7	54	1	1	9	0	28	--	--	1.02	.46	.45	10	0	3.2	1	6.6	SW	a25	SW	16+	--	--	--	----	--
Idaho Falls 42NW (R)	4790	------	------	41	17	28.8	-.1	56	6	-5	9	0	29	--	--	.68	.37	.44	8	--	----	--	5.5	SW	a23	NNW	27	--	--	--	----	--
Lewiston	1413	967.2	1019.9	49	33	40.5	.4	66	24	24	6+	0	13	--	--	1.39	.04	.73	10	0	T	T	----	---	--	---	--	4	5	21	8.0	--
Pocatello	4444	864.5	1020.2	47	27	37.0	1.1	58	25	14	5	0	21	27	69	1.31	.25	.39	11	0	1.6	2	12.6	SW	42	S	26	4	5	21	7.4	51
ILLINOIS																																
Cairo (U)	314	1007.5	------	58	40	48.7	.1	71	15+	26	10	0	5	--	--	3.97	.17	1.35	7	1	.0	0	8.8	Φ S	30	SW	15	15	8	7	4.3	70
Chicago (O'Hare)	656	991.5	1016.7	50	34	41.7	----	69	14	19	30	0	14	34	74	.81	----	.37	8	1	.1	T	14.6	SSW	*46	SW	15	9	6	15	6.2	--
Chicago (Midway)	610	993.9	1017.2	51	35	42.8	3.3	70	14	20	30	0	13	33	72	1.28	-1.05	.56	9	1	.7	T	13.5	SSW	39	W	29	8	6	16	6.5	45
Moline	589	994.2	1016.9	51	32	41.5	2.7	70	15	15	30	0	19	32	70	1.11	-1.04	.74	5	1	T	T	11.1	SSW	37	SW	28	8	9	13	6.0	54
Peoria	654	995.6	1018.5	51	31	40.7	1.0	72	14	15	30	0	20	33	74	1.57	-.78	1.02	6	1	.3	T	11.5	S	38	W	29	11	6	13	5.6	57
Rockford	728	988.8	1016.6	49	30	39.8	2.8	67	15	15	30	0	21	31	73	2.08	-.31	1.14	8	1	.6	1	11.7	SSW	*40	SW	28	10	7	13	6.0	--
Springfield	589	995.3	1019.0	54	33	43.5	2.6	77	14	19	30	0	17	34	70	2.13	-.49	1.54	6	1	.1	T	15.9	SSW	48	SW	28	14	6	10	4.7	66
INDIANA																																
Evansville	383	1004.4	1020.6	56	34	45.1	-.9	72	15	19	11	0	17	36	71	3.60	.40	1.23	8	2	T	T	9.6	S	39	S	28	13	6	11	4.9	64
Fort Wayne	801	986.5	1018.4	50	33	41.3	1.6	68	28	20	30	0	14	34	77	1.33	-1.13	.42	9	0	2.7	T	14.5	SSW	50	S	16	5	6	19	7.3	39
Indianapolis	793	988.8	1019.4	52	32	42.3	.8	69	14	20	30	0	17	34	74	1.68	-1.45	.81	8	1	T	T	9.3	SSW	29	W	29+	6	11	13	6.3	72
South Bend	768	988.5	1017.0	49	34	41.8	3.1	65	28+	21	29+	0	13	35	77	1.86	-.88	.42	13	2	10.1	4	11.5	SSW	*29	WSW	28	4	7	19	7.4	--
IOWA																																
Burlington	694	991.9	1018.2	53	31	42.3	2.8	71	15+	15	30	0	19	32	68	.50	-1.76	.29	3	1	T	0	11.7	SSW	38	W	28	13	5	12	5.4	70
Des Moines	948	986.1	1018.3	52	30	40.9	2.5	68	25	11	30	0	19	28	65	.52	-1.16	.32	4	2	T	T	13.4	S	49	W	28	11	7	12	5.6	65
Dubuque	1065	990.9	1016.9	47	29	37.9	2.3	65	15	13	30	0	24	29	70	2.76	.63	1.64	5	2	.2	T	----	---	--	---	--	9	7	14	6.3	--
Sioux City	1094	975.9	1017.4	52	26	39.2	3.7	75	25	9	30	0	24	26	63	.58	-.62	.52	4	1	.2	T	12.7	NW	49	NW	28	10	9	11	5.7	67
Waterloo	870	983.7	1016.5	49	27	37.9	1.9	65	15	10	30	0	24	29	70	.52	-1.42	.17	5	1	T	T	9.7	WNW	*32	WNW	29	9	7	14	6.3	--
KANSAS																																
Concordia (U)	1375	967.8	------	55	32	43.2	1.1	70	25	15	30	0	16	--	61	.21	-.94	.19	2	1	T	T	7.7	Φ S	37	NW	28	17	5	8	3.6	74
Dodge City	2594	929.6	1019.1	57	31	44.1	1.4	75	25	17	29	0	17	27	56	.28	-.59	.23	2	1	.7	1	16.3	S	54	NW	28	19	5	6	3.4	87
Goodland	3645	888.9	1018.2	55	25	40.1	2.6	77	25	12	29	0	26	23	59	.27	-.31	.18	3	0	2.6	2	12.4	NW	*51	NNW	27	15	9	6	4.2	--
Topeka	877	982.4	1019.2	58	31	44.5	1.9	75	14	13	10	0	20	33	66	.13	-1.46	.08	2	1	T	0	12.2	SSW	47	S	27	15	6	9	4.2	71
Wichita	1321	969.5	1019.0	59	35	46.5	1.4	73	13	20	10	0	12	34	66	.37	-1.36	.35	2	1	T	T	15.1	S	47	W	28	16	5	9	4.1	76
KENTUCKY																																
Lexington	979	984.8	1021.5	56	35	45.5	.7	75	15	20	30	0	10	35	72	3.61	.46	1.22	8	1	T	T	11.2	S	--	---	--	7	12	11	5.9	--
Louisville	474	1000.9	1020.6	56	34	45.0	-.7	75	15	21	12+	0	14	36	73	3.35	.23	1.34	8	1	T	0	7.4	S	34	SW	15	12	6	12	5.4	61
LOUISIANA																																
Alexandria	107	1016.9	1021.5	69	45	57.3	----	82	28	30	30	0	3	48	80	1.19	----	.35	8	1	.0	0	16.1	NNE	--	---	--	10	4	16	6.0	--
Baton Rouge	64	1018.6	1021.9	71	48	59.8	.7	82	15	31	30	0	1	50	76	1.54	-3.19	.87	4	1	.0	0	8.4	NE	--	---	--	11	2	17	5.9	--
Lake Charles	12	1019.3	1020.8	72	53	62.2	2.9	84	15	33	30	0	0	54	75	4.32	-.02	2.44	5	1	.0	0	3.9	N	*18	WNW	16	9	4	17	6.1	--
New Orleans (U)	9	------	------	72	57	64.8	2.3	81	28+	41	30	0	0	--	72	.24	-3.77	.19	3	0	.0	0	6.0	---	19	NE	30	11	10	9	5.2	60
New Orleans	3	1019.3	1021.1	73	50	61.4	.5	82	28+	38	8	0	0	53	77	.60	-3.49	.39	4	0	.0	0	6.9	NE	*21	NNE	29	15	0	15	5.1	--
Shreveport	252	1012.5	1021.8	68	47	57.1	.8	80	27	29	11	0	2	46	70	2.99	-.91	.91	9	1	.0	0	9.8	SSE	--	---	--	10	6	14	6.0	56
MAINE																																
Caribou	624	989.5	1013.3	40	27	33.8	4.6	58	2	15	8	0	24	28	80	2.81	-.22	1.06	12	0	1.5	1	11.6	WSW	*35	WSW	18+	2	8	20	8.1	--
Portland	61	1011.7	1015.9	51	31	40.7	3.2	62	16	16	8	0	19	40	75	3.15	-.64	1.81	7	2	.0	0	9.4	W	33	SW	2+	4	12	14	7.0	46
MARYLAND																																
Baltimore (U)	14	------	------	59	43	51.1	2.4	74	16	31	30+	0	2	--	--	1.09	-1.87	.50	9	--	----	--	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1015.0	1019.8	59	35	46.9	1.3	72	16	24	8	0	9	36	69	1.08	-1.88	.55	9	0	.2	0	8.7	W	34	NW	30	11	8	11	5.1	53
Frederick	294	------	------	57	32	44.1	-1.3	69	15	20	8	0	17	--	--	1.45	-1.50	.54	8	--	----	--	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.(R)	629	992.1	------	54	37	45.4	----	65	16	23	8	0	8	--	90	2.72	-1.48	1.25	6	0	T	0	----	---	--	---	--	--	--	--	----	56
Boston	15	1015.0	1016.3	55	41	48.0	3.6	67	16	28	8	0	3	34	63	2.49	-1.00	1.27	6	1	T	T	12.3	WNW	34	WNW	29+	10	8	12	5.8	68
Nantucket	43	1016.7	1017.4	54	41	47.4	2.9	61	16	30	24	0	5	40	77	3.61	-.11	1.06	11	4	T	0	12.8	WNW	34	SW	29	8	7	15	6.7	52
Worcester	986	978.1	1015.9	50	34	41.9	2.3	62	16	20	8	0	13	30	67	3.68	-.63	1.65	3	1	T	T	9.7	WSW	*25	WNW	4	8	10	12	6.0	--
MICHIGAN																																
Alpena	689	987.8	------	47	29	38.0	2.3	62	26	18	7	0	21	31	76	2.06	-.37	.73	15	2	2.1	1	8.1	Φ W	30	E	28	2	3	25	8.4	22
Detroit (City AP)	619	989.5	1017.0	50	37	43.6	3.5	65	15	23	29	0	7	34	72	1.35	-.83	.65	11	0	1.0	1	13.2	SW	36	W	16	4	7	19	7.6	38
Detroit (M. Wayne Co.)	630	992.6	1017.1	50	34	42.2	----	66	15	23	30+	0	16	34	75	1.14	----	.45	12	0	.6	T	13.0	SW	--	---	--	3	8	19	7.6	--
Detroit (Willow Run)	722	987.8	1016.7	50	35	42.5	2.8	65	28+	23	30+	0	14	34	75	1.01	-1.19	.35	11	0	1.0	T	13.2	SW	*32	SSW	15	4	4	22	7.7	--
Escanaba (U)	594	990.2	------	44	32	37.8	3.9	54	21	21	30	0	14	--	73	2.43	.23	1.06	12	2	5.3	5	11.3	---	42	SW	28	5	6	19	7.2	32
Flint	761	987.5	1016.3	49	33	41.1	3.5	65	15	21	7	0	14	33	76	.86	-1.32	.30	10	1	.8	1	11.3	SW	*29	SW	28+	3	8	19	7.7	--
Grand Rapids	681	990.2	1016.0	50	34	41.8	4.2	65	15+	21	7	0	13	33	76	2.65	.12	.71	14	2	5.9	4	11.3	SSW	32	W	29+	2	8	20	7.8	30
Lansing	852	983.4	1016.1	50	33	41.2	3.3	65	28+	19	7	0	13	33	75	1.56	-.74	.39	14	1	1.7	1	14.9	SSW	56	W	30	4	7	19	7.4	39
Marquette (U)	677	985.1	------	42	32	37.0	3.1	57	26	21	30	0	16	--	69	3.02	-.10	.67	15	1	20.4	5	9.5	Φ W	38	SW	7	2	6	22	8.4	30
Muskegon	627	992.2	1015.7	48	34	41.3	2.8	62	15+	24	30+	0	13	33	78	3.66	1.02	1.56	14	3	6.8	3	13.3	SSW	*44	S	15+	2	7	21	8.1	--
Sault Ste. Marie	721	989.2	1012.5	42	30	36.3	4.8	57	15	15	30	0	18	30	81	3.82	.56	1.46	17	2	5.0	1	10.6	WNW	*28	SSW	15	2	3	25	8.5	27
MINNESOTA																																
Duluth	1409	971.9	1014.2	38	25	31.5	4.5	55	26	4	30	0	27	24	75	2.65	.87	2.26	9	1	14.8	12	15.2	WNW	68	E	28	5	4	21	7.6	43
Intern'l Falls	1179	972.2	1014.6	35	21	27.8	3.8	50	25	-9	30	0	30	22	77	1.41	.24	1.00	10	0	13.9	9	9.7	NW	*31	W	22	4	2	24	8.4	--
Minneapolis	830	980.7	1015.5	43	24	33.3	.3	61	25	3	30	0	25	25	72	.87	-.57	.61	7	1	2.4	T	11.5	NW	34	NW	29	5	9	16	7.0	50
Rochester	1017	966.8	1015.5	44	27	35.3	2.8	61	25	6	30	0	24	27	74	.74	-.78	.62	4	2	.1	T	12.6	NW	--	---	--	5	9	16	7.2	--
St. Cloud	1034	976.3	1015.5	41	22	31.7	2.3	57	21	-2	30	0	26	24	73	1.31	-.06	1.24	4	0	3.2	3	----	---	--	---	--	3	10	17	7.3	--
MISSISSIPPI																																
Jackson	305	1009.8	1022.0	68	43	55.8	.1	80	15+	28	12	0	3	45	71	2.45	-1.60	1.40	7	0	.0	0	5.1	NW	31	N	5	13	5	12	5.3	55
Meridian	292	1008.0	1022.2	69	40	54.3	.2	80	16+	25	12	0	6	46	80	1.23	-2.80	.95	4	0	.0	0	5.7	NNE	*24	NW	10	13	5	12	5.1	--
Vicksburg (U)	234	1012.5	------	66	47	56.9	.1	80	14	31	11	0	2	--	--	2.35	-2.26	.98	4	0	.0	0	7.8	---	26	N	5	10	7	13	5.4	63
MISSOURI																																
Columbia	778	988.8	1018.4	58	36	46.8	3.6	77	14	17	30	0	11	34	65	.84	-1.77	.42	6	2	.2	T	11.9	SSE	35	W	28	16	5	9	4.2	71
Kansas City	741	983.1	1018.9	58	35	46.4	2.1	74	15	17	30	0	13	31	56	.33	-1.84	.29	5	3	.1	T	9.2	SSW	43	W	28	16	6	8	4.0	89
St. Joseph	809	982.7	------	56	31	43.6	1.3	73	14	14	30	0	20	--	--	.26	-1.74	.10	4	2	T	T	11.6	S	*40	W	28	16	4	10	4.3	--
St. Louis (RFC)	465	------	------	57	39	48.1	2.1	78	14	24	30+	0	7	--	--	2.12	-.60	.85	6	--	T	0	----	---	--	---	--	--	--	--	----	--
St. Louis	552	998.6	1019.7	56	37	46.5	1.5	78	14	21	10	0	10	36	68	1.41	-1.16	.58	6	0	T	0	10.0	S	34	SW	28	13	9	8	4.7	63

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F.	°F	°F.	°F.	°F.		°F				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
MISSOURI (Cont'd.)																																
Springfield	1265	971.6	1020.1	59	34	46.7	2.2	76	14	17	10	0	15	36	70	3.07	0.32	1.85	8	1	T	T	13.1	SSE	38	SW	4	17	3	10	4.3	70
MONTANA																																
Billings	3567	889.9	1016.3	47	27	36.9	1.1	67	25	-2	28	0	22	19	53	.55	-.13	.18	6	0	3.6	2	13.7	WSW	47	NW	21	5	7	18	7.1	52
Butte	5530	828.0	1019.5	40	19	29.3	1.1	56	6	-6	28	0	29	19	67	.36	-.33	.17	9	0	4.5	1	7.2	NW	*31	NW	1	6	6	18	7.0	--
Glasgow	2277	940.1	1017.7	38	18	28.4	.4	58	25	-11	29	0	28	20	73	.30	-.22	.16	4	0	1.7	2	----	---	--	---	--	8	8	14	6.5	--
Great Falls	3664	886.2	1015.3	45	26	35.5	.3	58	24	-3	28	0	21	19	55	.79	.12	.36	7	0	7.8	4	13.8	SW	51	W	21+	4	12	14	6.8	65
Havre (U)	2488	925.2	1016.6	41	20	30.3	-.6	64	25	-16	29	0	26	--	--	.99	.51	.67	6	0	9.0	7	8.7	WSW	42	SW	21	5	11	14	6.6	46
Helena	3893	872.3	1018.1	44	23	33.6	1.9	59	24	-1	28	0	23	19	58	.19	-.45	.07	7	0	2.0	1	9.6	W	52	NW	16	6	11	13	6.4	55
Kalispell	2965	------	------	38	24	31.3	-.7	54	24	12	22+	0	26	--	--	1.59	.04	.69	13	1	10.1	3	----	---	--	---	--	1	8	21	8.4	--
Miles City	2629	930.9	1017.5	45	21	32.8	.0	70	25	-3	28	0	29	19	60	.12	-.37	.08	2	0	2.0	2	10.5	SSE	*44	NW	21	8	3	19	6.4	--
Missoula	3200	902.5	1019.7	42	24	32.9	1.0	58	25+	2	29	0	26	24	77	1.09	-.02	.60	10	0	5.1	2	7.0	NW	37	W	21	2	10	18	7.9	38
NEBRASKA																																
Grand Island	1841	950.2	1018.2	53	26	39.5	1.9	78	25	7	30	0	24	24	61	.41	-.57	.27	2	2	T	T	13.4	SSW	--	---	--	14	6	10	4.6	--
Lincoln (U)	1166	------	------	53	30	41.8	1.5	77	25	10	30	0	16	--	--	.33	-1.08	.17	2	2	T	T	10.2	NW	46	NW	28	14	5	11	4.8	70
Norfolk	1544	960.0	1017.2	51	25	38.1	3.2	76	25	6	30	0	27	24	58	.93	-.13	.90	3	1	.2	T	----	--	--	--	--	10	10	10	5.2	--
North Platte	2779	916.4	1017.8	54	20	36.7	.1	74	25	3	29	0	29	21	55	.32	-.23	.19	4	0	2.9	3	11.7	NW	63	N	27	13	7	10	4.9	73
Omaha	978	977.7	1018.0	53	30	41.3	2.4	72	25	11	30	0	21	28	63	.11	-1.18	.08	2	1	T	T	12.1	SSE	41	NW	28	11	10	9	4.8	75
Omaha N.Omaha AP	1323	968.5	------	51	28	39.8	2.8	74	25	9	30	0	23	--	--	.25	-1.04	.20	2	1	T	T	----	---		---	--	10	11	9	5.1	--
Scottsbluff	3950	879.4	1018.7	51	23	37.0	.9	74	25	5	29	0	27	22	61	.53	-.04	.27	6	0	6.8	4	12.4	WNW	*52	NW	28	11	7	12	5.5	--
Valentine	2587	924.1	------	51	21	36.1	1.7	76	25	-7	30	0	28	--	61	.41	-.23	.28	4	1	3.0	3	12.2	NW	51	N	28	15	3	12	4.9	68
NEVADA																																
Elko	5075	845.9	1019.5	48	25	36.1	1.6	65	1	9	15	0	26	26	66	1.28	.35	.47	10	0	2.2	1	6.3	SW	*29	SW	12	6	5	19	6.8	--
Ely	6257	809.7	1019.4	48	23	35.3	.1	67	1	6	28	0	29	22	59	1.82	1.13	1.29	8	1	2.4	1	10.4	S	47	S	12	6	10	14	6.3	74
Las Vegas	2162	951.2	1017.5	64	42	53.0	-.9	78	1	32	28	0	1	31	47	1.88	1.66	1.78	3	1	.0	0	8.4	WSW	*40	WSW	27	20	4	6	3.3	76
Reno	4397	862.5	1018.7	54	26	40.1	-.1	77	1	16	28	0	23	28	66	1.45	.81	.68	8	0	2.0	1	6.4	S	49	SW	25	8	4	18	6.8	64
Winnemucca	4299	869.3	1019.6	50	26	38.2	.6	68	1	11	28	0	23	28	69	2.05	1.21	.86	9	1	.9	1	7.3	S	40	S	25	5	6	19	7.3	32
NEW HAMPSHIRE																																
Concord	339	1005.3	1016.4	51	29	39.9	3.2	67	16	13	8	0	21	38	67	2.58	-.99	1.32	7	0	T	T	5.4	NW	26	W	17	6	13	11	6.3	54
Mt.Washington Obs.	6262	801.1	------	27	15	20.6	.7	42	16	1	7	0	30	--	90	4.74	-1.84	.74	16	1	21.2	5	45.1	---	‡117	W	4	3	5	22	8.3	29
NEW JERSEY																																
Atlantic City (U)	30	------	------	56	41	48.5	.4	63	16	29	8	0	3	--	--	1.53	-1.79	.53	5	--	.0	0	11.4	---	24	W	4	--	--	--	----	--
Atlantic City	58	1016.9	1019.6	58	38	47.9	1.4	71	16	26	8	0	10	38	72	1.74	-1.38	.69	5	0	.0	0	12.4	W	32	W	17	12	7	11	5.4	58
Newark	11	1017.4	1018.7	58	40	48.5	3.6	70	16	28	8	0	4	36	63	2.41	-.69	.96	7	0	.0	0	8.3	SW	*29	SSW	29	12	6	12	5.4	--
Trenton (U)	56	1011.0	------	56	40	48.0	2.4	69	16	29	8	0	2	--	--	2.10	-.76	1.08	7	1	.0	0	8.0	---	29	SW	29	12	6	12	5.1	72
NEW MEXICO																																
Albuquerque	5310	851.0	1018.7	59	34	46.5	2.5	71	1	23	29	0	15	25	45	.07	-.35	.07	1	1	.0	0	5.4	N	54	W	27	17	5	8	3.6	84
Clayton	4969	846.3	1017.6	58	30	43.6	1.2	75	26	12	29	0	18	--	--	T	-.39	T	0	0	T	T	----	---	--	---	--	15	6	9	4.3	--
Raton	6379	806.0	1017.3	57	23	39.8	1.4	71	26	12	29	0	29	--	--	.09	-.48	.07	3	0	.7	T	----	---	--	---	--	15	6	9	4.3	--
Roswell	3612	895.7	1014.6	66	30	47.8	-.5	82	26	16	23	0	17	28	53	T	-.39	T	0	0	.0	0	7.1	---	44	SW	27	15	6	9	4.2	--
Silver City	5453	836.1	1017.1	65	34	49.2	----	73	5+	21	29	0	17	--	--	.06	----	.06	2	0	.0	0	----	---	--	---	--	16	9	5	3.5	--
NEW YORK																																
Albany	277	1013.0	1016.9	50	33	41.5	2.5	59	16+	19	8	0	15	32	72	1.17	-1.52	.45	7	1	.1	0	8.6	S	36	NW	4	2	14	14	7.1	50
Binghamton	1590	956.6	1016.7	48	33	40.6	3.4	62	15	21	30+	0	16	33	76	1.01	-1.84	.33	6	0	.4	T	9.7	SW	36	SW	30	1	11	18	7.7	46
Buffalo	693	987.9	1016.7	50	35	42.8	2.9	66	15	22	30	0	13	36	78	2.94	-.15	1.01	14	0	15.9	16	11.8	WSW	35	SW	16	1	11	18	8.0	39
New York (U)	10	1016.8	------	56	42	48.9	2.6	66	16	30	30	0	2	--	--	3.31	.22	1.58	6	--	.0	0	13.1	---	43	NW	4	14	5	11	5.0	67
New York(Laguardia)	19	1016.6	1018.5	57	44	50.4	3.6	69	16	32	8	0	1	37	62	2.71	-.28	1.03	6	1	.0	0	12.4	SW	40	NW	4	11	6	13	5.5	--
Rochester	543	996.9	1016.6	52	35	43.2	3.5	69	15	22	30	0	13	34	73	.73	-2.01	.20	11	2	2.8	1	12.6	SSW	47	W	17	3	9	18	7.7	45
Schenectady	217	------	------	51	35	42.7	4.1	60	22	24	8	0	13	--	--	1.01	-1.83	.33	7	--	T	0	----	---	--	---	--	16	8	6	4.3	--
Syracuse	424	994.2	1016.6	52	36	43.8	2.6	67	15	26	30	0	12	33	68	1.68	-1.45	.54	13	0	2.7	2	11.7	WSW	40	SW	30	3	9	18	7.6	33
NORTH CAROLINA																																
Asheville (U)	2203	940.9	------	60	35	47.4	.8	70	28+	25	30	0	11	--	--	.68	-1.43	.38	7	0	T	0	7.7	---	32	NW	29	11	11	8	4.9	57
Cape Hatteras (R)	7	1019.5	1020.2	66	50	57.9	.6	79	1	32	7	0	1	50	78	1.43	-2.42	.64	9	2	.0	0	9.5	NE	33	SW	5	10	8	12	5.4	70
Charlotte	725	992.8	1021.6	64	39	51.8	1.4	74	16+	29	8	0	4	40	68	.60	-2.05	.45	4	0	.0	0	7.3	N	34	NW	5	13	6	11	4.7	68
Greensboro	891	989.4	1022.0	62	35	48.6	.6	72	16	22	8	0	11	36	68	.66	-2.05	.29	7	1	.0	0	7.2	WSW	26	SW	29	14	3	13	4.8	71
Raleigh	433	1007.1	1021.3	64	38	50.8	.4	76	16	23	8	0	9	38	65	.88	-1.97	.42	5	0	.0	0	7.0	S	*23	NW	5	13	7	10	4.4	70
Wilmington	30	1018.0	1020.8	67	44	55.5	-.2	77	29+	28	8	0	2	48	81	1.85	-.74	.77	8	0	.0	0	7.0	N	23	N	19+	14	5	11	4.5	69
Winston-Salem	967	985.5	1021.4	62	38	49.6	1.0	71	16+	25	8	0	8	35	60	.60	-2.19	.26	7	0	.0	0	7.6	SW	*29	SSW	16	14	5	11	4.6	--
NORTH DAKOTA																																
Bismarck	1650	955.0	1017.5	41	17	28.9	.5	71	25	-14	30	0	30	16	62	.40	.13	.23	3	0	5.6	3	11.0	WNW	47	NW	21	7	7	16	6.7	46
Devils Lake (U)	1471	960.7	------	36	18	27.0	1.9	61	25	-8	30	0	30	--	71	.50	-.17	.25	5	1	5.5	3	9.4	NW	40	W	21	7	9	14	6.4	53
Fargo	895	980.7	1016.5	40	20	29.9	2.3	58	21	-12	30	0	30	22	76	1.63	.76	1.62	2	0	11.0	11	16.8	S	56	N	29	5	7	18	7.2	39
Williston (U)	1877	946.8	1016.9	39	19	29.1	.8	67	25	-11	29	0	28	19	69	.64	.06	.33	7	0	4.5	2	6.6	W	40	NW	21	5	10	15	6.6	51
OHIO																																
Akron	1210	980.2	1019.1	51	34	42.4	2.0	66	15	18	30	0	15	34	74	1.46	-.92	.41	13	0	5.6	4	11.7	SSW	--	---	--	4	10	16	7.0	-
Cincinnati Obs.	761	------	------	56	37	46.4	1.8	73	15	24	30	0	11	--	--	2.27	-.79	.96	9	--	T	T	6.8	--	22	SW	29	--	--	--	----	57
Cincinnati	869	987.7	1020.3	56	36	46.1	2.7	72	15	23	30	0	11	32	62	2.33	-.70	1.02	9	0	T	0	10.3	SSW	*28	W	29+	7	9	14	6.0	--
Cleveland	787	989.5	1018.0	51	34	42.4	.7	68	15	20	30	0	15	36	79	2.07	-.59	.50	15	1	4.7	T	12.7	S	31	S	16	3	7	20	8.0	41
Columbus (U)	724	------	------	54	37	45.2	-2.0	70	15	21	30	0	11	--	--	1.32	-1.22	.55	10	0	.8	1	----	---	--	---	--	--	--	--	----	-
Columbus	815	989.2	1020.0	54	35	44.4	2.5	71	15	22	30	0	15	35	71	1.60	-1.26	.64	11	0	.8	1	8.8	S	32	SW	16	4	11	15	6.9	37
Dayton	1002	982.5	1019.6	52	34	43.3	1.4	69	15	20	30	0	13	33	71	1.91	-.70	.57	11	0	.9	T	10.9	S	42	S	8	7	11	12	6.2	55
Mansfield	1296	------	------	50	35	42.5	----	65	15	17	30	0	11		--	1.92	----	.53	11	0	3.7	3	----	---	-	--	--	4	13	13	6.8	--
Sandusky (U)	603	995.3	------	53	37	44.6	2.4	67	15+	20	30	0	8	-	--	1.79	-.48	.40	13	0	T	T	10.5	---	44	NW	30	4	11	15	6.8	46
Toledo	676	992.1	1018.0	50	32	40.9	1.1	66	15	19	11	0	17	34	77	1.02	1.13	.34	11	0	.5	T	10.5	SSW	33	SW	1	3	6	21	7.5	64
Youngstown	1178	975.1	1018.5	51	34	42.5	1.5	65	16+	19	30	0	15	32	70	1.38	-2.11	.46	12	0	3.3	3	11.0	SSW	*29	W	30	4	7	19	7.6	--
OKLAHOMA																																
Oklahoma City	1280	976.3	1020.5	63	40	51.4	2.4	76	15+	23	10	0	9	37	63	.24	-1.58	.16	3	0	0	0	13.5	SSE	50	W	27	15	6	9	4.4	60
Tulsa	672	995.3	1020.0	64	39	51.9	2.3	79	14	23	10	0	8	37	69	.63	-1.77	.46	6	1	.0	0	11.3	SSE	38	N	9	16	4	10	4.6	64
OREGON																																
Astoria	8	1014.6	1015.0	54	40	46.9	.2	65	5	28	27	0	2	41	81	13.91	3.55	2.85	20	2	T	0	11.0	SSE	*37	SSW	16+	3	4	23	8.2	--
Burns (U)	4140	872.7	1018.3	45	24	34.5	2.0	59	20	4	28	0	27	27	73	2.07	.90	.37	15	0	5.7	3	----	---	--	---	--	6	4	20	7.2	--
Eugene	361	1003.1	1016.9	53	38	45.4	.1	62	20+	28	9	0	7	--	--	12.02	6.33	4.53	17	0	.0	0	9.2		*40	SSW	20	2	6	22	8.2	--
Meacham	4050	------	------	39	27	33.3	-1.6	57	24	18	28	0	29	--	--	6.23	2.36	1.70	20	0	21.5	6	----		--	-	--	4	4	22	8.1	--
Medford	1312	970.2	1018.6	54	35	44.4	.2	70	5	23	4	0	8	36	78	4.70	2.03	1.93	17	0	3.5	1	5.1	SE	*29	SSW	21+	4	3	23	8.0	-
Pendleton	1492	963.4	1017.5	51	34	42.5	1.4	71	24	25	28+	0	11	33	72	1.70	.19	.57	10	0	.0	0	9.5	S	*46	SSW	24	6	5	19	7.3	--
Portland	21	1010.5	1016.2	53	40	46.5	1.0	61	5	30	27+	0	5	40	80	8.63	3.41	2.39	18	2	.0	0	9.5	ESE	43	SW	20	3	2	25	8.5	39
Roseburg	505	998.3	1017.6	55	37	46.2	.0	65	30+	27	5	0	6	--	--	8.38	3.87	2.41	15	0	T	0	4.5	S	30	SW	20	2	4	24	8.1	37
Salem	195	1009.5	1016.9	54	39	46.9	1.5	69	5	30	28+	0	5	41	80	9.45	3.49	2.57	20	0	.0	0	8.6	S	*32	S	24	4	1	25	8.2	--
Sexton Summit (R)	3836	882.5	1017.6	[illegible]	[illegible]	38.1	-3.1	60	5	23	27	0	15	-		10.83	6.29	3.78	17	0	14.1	9	15.1	S	—	—	—	1	6	20	7.8	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F. or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F.	°F	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
PACIFIC AREA																																
Canton Island	9	1008.1	1008.5	90	79	84.4	0.7	93	[illegible]	75	26	19	0	72	70	1.12	0.85	1.10	3	0	0.0	0	13.8	E	*25	NE	13+	0	0	30	10.0	--
Eniwetok	13	1008.8	1009.5	87	79	83.1	----	90	2	76	21+	1	0	76	79	5.74	----	1.64	17	0	.0	0	15.7	---	--	---	--	--	--	--	----	--
Guam (R)	361	------	------	85	75	80.1	1.6	89	4	71	5	0	0	--	--	11.30	3.03	1.56	24	3	.0	0	8.1	①NE	30	NE	29	--	--	--	----	32
Johnston Is.	7	1012.9	1013.5	84	76	80.0	----	86	14	73	23+	0	0	71	71	1.18	----	.23	16	0	.0	0	15.7	---	28	E	26+	3	17	10	6.1	58
Koror (R)	94	1006.1	1009.9	89	76	82.4	1.0	91	24+	73	14+	10	0	77	85	10.12	-1.72	2.14	26	4	.0	0	4.3	E	18	E	19	0	[illegible]	28	9.7	--
Kwajalein	8	1008.5	1009.4	86	76	81.0	----	88	11+	73	13+	0	0	76	84	19.20	----	3.28	27	3	.0	0	10.5	ENE	*25	NE	13+	0	4	26	8.7	--
Ponape (R)	123	1003.4	1008.7	88	74	81.0	-.3	90	15+	72	25+	2	0	76	88	18.88	4.41	3.26	27	5	.0	0	3.3	E	19	NE	3	0	3	27	9.3	61
Truk, Moen Island	8	1008.1	1008.4	87	76	81.4	.6	90	3+	74	13+	2	0	77	84	16.00	4.90	4.27	26	5	.0	0	6.0	NNE	32	S	28	0	6	24	9.1	50
Wake Island	11	1013.2	1013.6	85	75	80.3	.4	88	8	71	25	0	0	73	78	4.48	1.31	2.36	17	0	.0	0	16.0	ENE	*28	E	27+	17	5	8	4.7	--
PENNSYLVANIA																																
Allentown	376	1004.6	1019.2	54	32	43.3	1.3	63	29+	20	8	0	17	34	74	2.30	-.77	1.04	7	0	.0	0	8.4	WSW	*31	W	29	[illegible]	[illegible]	14	5.7	--
Erie	732	------	1017.4	52	38	44.8	3.8	69	15	20	30	0	6	35	69	2.68	-.58	.66	16	1	5.3	2	14.8	SSW	*32	SSE	28	2	6	22	8.1	--
Harrisburg	335	1005.3	1019.3	55	35	45.1	1.1	67	15	22	8	0	10	32	64	1.39	-1.34	.62	6	1	.0	0	5.7	W	26	W	30	8	6	16	6.4	63
Philadelphia (U)	35	------	------	58	43	50.5	2.7	69	16	31	30	0	1	--	--	----	----	----	--	--	---	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1014.3	1019.0	56	35	45.5	-.4	70	16	25	13+	0	12	36	72	1.92	-1.16	.74	7	0	.0	0	7.6	WSW	29	NW	30	10	7	13	5.9	56
Pittsburgh (U)	749	------	------	55	39	46.8	2.2	70	15	21	30	0	7	--	--	1.40	-1.21	.41	10	--	.6	--	----	---	--	---	--	--	--	--	----	34
Pittsburgh	1151	988.6	1019.7	52	34	43.1	2.1	70	15	20	30	0	15	31	66	1.22	-1.37	.43	9	0	2.6	1	9.4	SW	*28	WNW	30	3	8	19	7.4	60
Reading (U)	266	1006.7	------	56	40	46.9	1.5	66	16	25	8	0	6	--	--	1.93	-1.12	.96	6	1	T	T	9.4	---	40	[illegible]	28	11	5	14	5.8	55
Scranton	940	983.1	1018.8	51	33	41.4	.7	64	16+	18	8	0	15	30	66	1.77	-1.44	1.07	9	0	.7	T	8.6	SW	26	NW	4	7	9	14	6.4	47
Williamsport	527	999.5	1019.6	52	32	41.5	-.2	62	15	20	8	0	16	32	72	1.45	-1.81	.50	11	0	T	T	6.8	W	*23	W	30	6	[illegible]	15	6.4	--
RHODE ISLAND																																
Block Island	110	1012.4	------	54	42	48.0	2.7	62	1	30	8	0	2	--	--	3.84	.31	2.15	10	0	.0	0	----	---	--	---	--	7	12	11	6.1	--
Providence	55	1011.3	1017.5	55	36	45.7	3.1	64	16	22	8	0	[illegible]	34	68	2.77	-.97	1.71	5	1	T	0	10.2	S	*37	SSW	29	12	8	10	5.3	60
SOUTH CAROLINA																																
Charleston (U)	9	------	------	68	52	60.3	1.7	80	16	40	8	0	0	--	--	.77	-1.15	.71	3	--	---	--	----	---	31	NW	7	--	--	--	----	--
Charleston	41	1019.8	1021.8	71	45	57.9	1.6	82	16	27	8	0	3	47	75	.79	-1.26	.64	4	1	.0	0	7.3	N	35	N	7	13	6	11	4.8	63
Columbia	217	1008.3	1021.5	68	40	54.2	.3	80	28	22	8	0	7	42	71	.68	-1.57	.41	5	0	.0	0	4.6	SW	20	WNW	5	13	5	12	4.8	71
Florence	146	1014.9	1020.7	68	43	55.4	1.8	80	16	27	8	0	1	43	70	1.80	-.48	1.41	5	0	.0	0	6.6	N	*19	SSW	29+	15	5	10	4.4	--
Greenville	1018	983.8	1021.7	65	40	52.5	1.2	75	28+	29	30+	0	4	38	65	.54	-2.50	.38	4	0	.0	0	6.9	SW	26	NW	7	15	5	10	4.7	74
Spartanburg	801	990.9	1021.4	63	40	51.8	.6	74	2	27	8	0	3	39	66	.52	-2.45	.35	2	0	.0	0	8.5	SW	*25	WNW	30+	13	[illegible]	11	4.9	--
SOUTH DAKOTA																																
Huron	1282	968.5	1017.0	46	18	32.1	-.4	68	25+	-15	30	0	29	22	70	.87	.21	.83	4	0	7.8	8	13.5	SSE	47	S	7	7	10	13	6.2	68
Rapid City	3165	900.8	1017.5	50	24	36.9	1.6	75	25	5	30+	0	26	18	53	.39	-.16	.17	5	0	1.8	1	12.7	NNW	45	NW	28	11	4	15	5.7	58
Sioux Falls	1420	963.4	1016.3	47	24	35.9	3.7	68	21	3	30	0	28	22	60	1.51	.40	1.37	5	1	.1	T	11.0	WNW	*46	WNW	28	6	11	13	6.2	--
TENNESSEE																																
Bristol	1519	966.2	1021.6	59	34	46.4	.6	74	15	23	8	0	14	36	71	1.57	-.99	.61	9	1	.4	T	5.4	WSW	*21	NW	30+	11	10	9	5.3	--
Chattanooga	670	993.9	1022.2	61	36	48.9	-.2	74	28	26	8	0	12	39	77	2.68	-1.35	1.26	8	1	.0	0	5.7	S	27	NW	6	10	10	10	5.3	63
Knoxville	950	986.2	1022.2	61	37	48.8	.4	74	28	26	30+	0	12	38	71	2.55	-.60	.82	8	1	.0	0	6.7	SW	43	SW	16	10	[illegible]	12	5.7	34
Memphis (U)	271	------	------	61	44	52.6	.5	77	15	28	11+	0	3	--	--	2.92	-1.39	1.16	7	--	.0	0	----	---	--	---	--	--	--	--	----	--
Memphis	263	1006.6	1021.7	62	39	50.8	.2	78	15	24	11	0	6	39	67	3.62	-.94	1.26	7	2	.0	0	9.2	S	28	S	28	12	7	11	5.1	69
Nashville	577	1001.1	1021.5	61	35	47.9	-1.4	76	15	20	11	0	12	37	69	2.71	-.69	1.10	6	1	.0	0	7.2	S	‡29	S	15+	10	9	11	5.2	63
Oak Ridge	905	988.7	------	59	35	47.2	.2	69	15	24	8	0	14	--	--	2.76	-1.26	1.05	9	0	.0	0	3.1	---	37	---	2	13	6	11	5.0	--
TEXAS																																
Abilene	1759	957.7	1019.6	69	45	57.0	3.3	83	15	25	30+	0	4	42	61	.02	-1.00	.02	2	0	.0	0	9.9	S	33	S	27	12	5	13	5.5	65
Amarillo	3590	891.0	1018.3	61	33	47.1	1.9	76	26+	20	29	0	13	26	49	T	-.88	T	0	0	T	0	13.6	SW	50	W	27	14	8	8	4.1	91
Austin	615	998.3	1020.4	69	52	60.7	1.5	87	2	32	11	0	1	52	76	1.90	-.45	.69	11	1	.0	0	8.9	SSE	28	N	9	5	8	17	6.9	43
Brownsville	16	1016.3	1019.0	79	61	69.6	1.8	87	9+	44	30+	0	0	63	82	1.18	-.37	1.01	6	0	.0	0	9.0	SE	31	NW	10	4	13	13	6.3	48
Corpus Christi	41	1018.6	1019.8	75	58	66.5	1.6	88	9+	40	30	0	0	60	82	2.24	.50	.82	10	3	.0	0	10.0	N	32	NE	9	5	[illegible]	16	6.7	51
Dallas	487	1002.0	1021.0	69	47	57.9	2.1	85	15	30	30	0	1	44	63	.82	-1.61	.72	2	1	.0	0	10.8	S	31	S	27	9	7	14	5.9	55
Del Rio (U)	957	------	------	70	53	61.4	1.2	85	2	36	30	0	0	--	--	.33	-.47	.27	5	0	.0	0	----	---	--	---	--	--	--	--	----	--
El Paso	3920	888.9	1018.3	68	38	52.9	.9	80	2	27	29+	0	8	27	41	.11	-.27	.11	2	0	.0	0	9.2	NNE	41	NW	27	15	5	10	4.1	85
Fort Worth	544	999.7	1021.1	69	46	57.5	1.7	87	15	27	30	0	4	45	66	.49	-1.75	.43	2	0	.0	0	12.5	S	*35	SSW	27	8	10	12	6.0	--
Galveston (U)	7	------	------	70	60	65.2	1.6	79	4+	42	30	0	0	--	--	3.88	.04	1.77	8	--	.0	0	12.4	---	30	N	29	--	--	--	----	57
Galveston	5	1018.0	1020.6	70	60	65.1	1.7	80	4	42	30	0	0	57	75	4.39	.20	2.11	8	5	.0	0	10.7	E	--	---	--	8	7	15	6.1	--
Houston (U)	41	1015.2	------	72	56	63.8	1.9	84	2	36	30	0	0	--	--	4.72	.77	1.71	12	2	.0	0	9.8	① NE	29	N	9	9	7	14	6.3	54
Houston	50	1018.0	1020.9	73	55	64.3	3.4	85	15	34	30	0	0	57	80	3.69	-.49	1.24	11	2	.0	0	8.7	SSE	--	---	--	8	5	17	6.7	--
Laredo	500	1004.1	1019.5	75	57	66.2	.2	93	2	39	30	2	0	55	73	2.76	1.79	1.86	9	2	.0	0	7.4	NE	*32	NE	9	6	6	18	7.1	--
Lubbock	3243	906.5	1019.5	66	36	50.8	2.2	82	25	20	29	0	12	32	53	.00	-.63	.00	0	0	.0	0	13.9	SW	*44	SW	27	15	7	8	4.1	--
Midland	2854	918.7	1018.5	67	42	54.7	1.9	82	27	25	29	0	4	37	56	.16	-.51	.13	3	0	.0	0	10.0	S	*29	WSW	15	12	8	10	5.1	--
Port Arthur	16	1019.0	1020.6	71	54	62.3	3.0	81	28+	34	30	0	0	55	79	2.82	-.74	1.02	7	3	.0	0	9.4	ENE	36	N	29	8	7	15	6.1	48
San Angelo	1903	951.9	1019.5	70	46	58.0	1.6	84	15	22	30	0	3	45	66	.21	-.88	.21	2	0	.0	0	12.1	SSW	*35	SSW	27	11	6	13	5.8	--
San Antonio	792	994.9	1020.2	71	53	62.2	2.4	86	2	34	30+	0	0	52	74	1.30	-.10	.51	9	2	.0	0	9.5	N	33	N	9	5	7	18	6.9	38
Victoria	110	1015.2	1019.9	74	55	64.4	.6	85	2	35	30	0	0	57	78	3.80	1.57	1.46	11	4	.0	0	10.2	N	‡40	SSE	15	6	6	18	6.8	--
Waco	500	999.7	1021.0	70	49	59.3	1.5	85	15	30	11	0	2	49	72	.86	-1.39	.47	6	1	.0	0	12.4	S	*35	NNW	29+	6	7	17	6.5	--
Wichita Falls	1020	982.4	1019.8	69	42	55.6	3.9	84	15	25	30+	0	5	39	59	T	-1.39	T	0	1	.0	0	11.4	S	*32	N	9	12	8	10	4.7	--
UTAH																																
Milford	5028	845.9	1020.0	53	26	39.6	2.2	73	1	7	29+	0	22	--	--	.93	.39	.60	5	1	2.9	3	----	---	--	---	--	11	6	13	5.2	--
Salt Lake City	4220	870.0	1020.4	50	31	40.4	1.1	69	25	19	22	0	20	30	72	1.73	.31	.84	11	0	5.0	2	9.6	S	34	S	25+	7	7	16	6.6	49
Wendover	4237	873.0	1019.3	48	31	39.7	----	72	1	20	30+	0	17	--	--	.25	----	.12	5	0	T	T	----	---	--	---	--	10	6	14	5.6	--
VERMONT																																
Burlington	331	1000.2	1015.2	47	32	39.2	2.8	59	16	20	8+	0	19	30	70	1.96	-.89	.85	9	1	.7	1	9.4	SSW	28	SW	9	1	7	22	8.4	34
VIRGINIA																																
Lynchburg	947	986.3	------	60	37	48.5	1.2	71	28+	22	8	0	8	--	--	.90	-1.47	.67	6	1	.0	0	7.6	---	29	N	7	15	4	11	4.8	68
Norfolk	26	1019.7	1021.1	63	43	52.7	1.3	78	16	33	14	0	0	43	76	1.10	-1.57	.43	7	1	.0	0	9.5	SW	27	W	30	12	2	16	5.5	71
Richmond	162	1014.8	1021.1	63	37	50.1	1.7	77	16	27	12+	0	7	36	67	.85	-1.64	.77	5	1	.0	0	7.0	SSW	27	SW	16	10	8	12	5.3	61
Roanoke	1174	977.9	1021.0	60	35	47.7	.8	71	14	20	8	0	9	32	59	.44	-2.37	.24	7	0	T	0	7.9	WNW	--	---	--	13	7	10	4.8	--
WASHINGTON																																
Olympia	190	1008.5	1015.6	50	34	41.7	-1.8	59	5+	22	27	0	15	39	89	11.33	4.56	2.38	20	0	8.0	7	6.8	SW	*30	SSW	22+	1	6	23	8.4	—
Seattle (U)	14	------	------	52	42	46.9	-.1	63	5	32	28	0	1	--	--	8.01	3.55	2.29	17	--	4.5	2	----	---	47	SW	11	--	--	--	----	40
Seattle	14	1013.9	1015.1	--	--	----	----	--	--	--	--	--	--	38	78	----	----	----	--	--	----	--	8.1	SSE	--	---	--	--	--	--	----	--
Seattle-Tacoma	386	1001.7	1015.7	51	38	44.5	.6	65	5	27	28+	0	4	37	78	8.03	3.48	2.03	21	1	5.2	4	10.7	S	*31	S	11	4	5	21	7.8	--
Spokane	2357	947.2	1017.4	43	28	35.2	-.5	53	1	17	8	0	23	29	80	4.64	2.76	1.41	14	0	2.5	1	8.9	SSW	36	SW	16	5	6	19	7.4	48
Stampede Pass (R)	3958	876.7	1017.4	34	27	30.4	-1.2	44	6	20	28+	0	29	--	--	16.41	3.15	2.41	18	0	110.6	58	----	---	--	---	--	3	3	24	8.4	--
Tatoosh Island(R)	101	1010.2	1013.4	51	43	46.9	-.5	61	5	38	24+	0	0	41	80	8.47	-1.05	1.42	22	4	T	0	19.8	ENE	66	S	19	5	0	25	8.1	28
Walla Walla (U)	949	980.7	1016.9	50	38	43.9	1.4	69	24	26	28	0	[illegible]	--	--	2.29	.43	.77	13	0	.0	0	5.6	D S	38	S	20	4	6	20	7.8	31
Yakima	1061	977.7	1017.7	50	27	38.1	.0	61	16+	18	27+	0	27	30	74	1.55	.57	.85	6	0	T	T	6.2	WNW	*32	[illegible]	19	6	9	15	6.5	--
WEST INDIES																																
San Juan, P.R.(U)	47	------	------	85	74	79.5	1.1	89	2	72	30	0	0	—	--	5.43	-.94	1.69	16	3	.0	0	----	---	--	---	--	--	--	--	----	--
San Juan, P.R.	15	1011.6	1014.3	87	72	79.4	1.6	92	3+	68	6	5	0	72	81	4.56	-3.34	1.49	17	3	.0	0	8.3	SE	26	NE	29+	3	22	5	5.7	63
Swan Island	33	1011.5	------	87	76	81.1	1.3	89	12+	71	19+	0	0	--	--	5.99	-1.11	.83	22	5	.0	0	----	---	--	---	--	2	19	9	6.9	--

See footnotes at end of table

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature								No. of days				Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile			No. of days (sunrise to sunset)				
		Station ∅	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F	°F	°F.	°F.	°F.		°F				°F.	%	In.	In.	In.			In.	In.	M p h		M. p. h.			0–3	4–7	8–10	0–10	%
WEST VIRGINIA																																
Charleston	950	984.7	1020.8	58	36	47.3	1.5	77	15	24	12+	0	11	36	67	2.11	-1.06	0.70	9	0	0.8	T	6.2	WSW	*28	WNW	6	6	7	17	6.8	--
Huntington (U)	567	------	------	59	36	47.4	.7	78	15	25	30+	0	10	--	--	1.77	-1.02	.50	10	--	T	0	----	--	--	--	--	--	--	--	----	--
Parkersburg (U)	615	------	------	57	36	46.6	1.6	75	15	23	12	0	14	--	--	1.16	-1.51	.27	9	0	.5	1	6.4	---	24	W	30+	5	9	16	6.4	38
WISCONSIN																																
Green Bay	689	991.5	1014.6	45	29	37.1	3.6	62	15	16	30	0	20	30	76	.69	-1.25	.35	5	2	.1	T	14.7	SW	55	SW	28	6	8	16	6.9	41
La Crosse	652	990.2	1015.7	47	30	38.2	3.9	64	15	13	30	0	22	29	72	.74	-1.07	.48	6	2	1.0	T	11.6	S	*30	NNW	29+	5	7	18	7.3	--
Madison	857	979.3	1015.8	47	28	37.5	2.2	64	15	14	30	0	21	31	78	1.47	-.82	.74	9	2	2.7	2	10.7	S	51	SW	15	7	8	15	6.4	52
Milwaukee	672	990.9	1016.5	48	30	39.2	1.9	66	15	19	23	0	22	33	80	2.12	.01	1.47	9	3	2.8	2	12.6	WSW	42	SW	28+	7	8	15	6.5	51
WYOMING																																
Casper	5319	836.8	1017.8	43	24	33.7	.4	59	25	2	28	0	25	21	64	1.03	.21	.52	9	0	17.3	7	16.9	SW	*46	SW	25	9	8	13	5.8	--
Cheyenne	6131	810.7	1017.7	48	23	35.6	.5	67	26+	8	5	0	24	16	50	.43	-.27	.14	5	0	5.8	2	14.5	WNW	66	W	1	12	8	10	5.4	57
Lander	5563	834.7	1019.2	42	19	30.5	.5	63	25	-1	29	0	27	19	67	1.40	.53	.55	4	0	19.1	9	5.6	Ⓘ SE	45	W	23	8	12	10	5.4	63
Sheridan	3942	883.8	1018.4	46	21	33.6	.5	73	25	3	29+	0	27	21	66	.69	-.24	.46	7	0	6.9	4	8.2	NW	56	NW	1	9	6	15	5.8	57

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

a Maximum hourly average.

+ And also on an earlier date or dates.

∅ Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan Stations.

Ꝥ Sun below horizon November 18-30 inclusive.

Ⓘ Wind direction to 8 compass points only.

¢ City Office Data.

† Airport Data.

‡ Peak Gust.

@ Sun below horizon November 26-30 inclusive.

HEATING DEGREE DAYS

(Base 65°F.)

NOVEMBER 1960

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	346	445	532
Huntsville	411	525	
Mobile	170	206	247
Montgomery	289	353	373
ALASKA			
Anchorage	1267	3179	3220
Annette	712	2049	2126
Barrow	2244	6900	6055
Barter Island	2158	6417	
Bethel	1442	3945	3767
Cold Bay	957	3063	3059
Cordova	991	3033	3000
Fairbanks	1978	2492	4077
Juneau	915	2717	2807
King Salmon	1317	3470	3352
Kotzebue	1743	4601	4500
McGrath	1857	4350	4137
Nome	1542	4272	4191
St. Paul	1019	3636	3449
Shemya	954	3156	
Yakutat	926	2838	2918
ARIZONA			
Flagstaff	839	1670	1832
Phoenix (U)	101	115	195
Phoenix	153	169	245
Prescott	550	844	877
Tucson	183	220	246
Winslow	596	894	957
Yuma	59	59	105
ARKANSAS			
Ft. Smith	396	498	575
Little Rock	431	534	525
Texarkana	295	348	386
CALIFORNIA			
Bakersfield	333	393	314
Bishop	627	876	872
Blue Canyon	719	1129	1184
Burbank	193	228	256
Eureka (U)	408	1680	1525
Fresno	394	490	431
Long Beach	188	221	
Los Angeles (U)	135	157	198
Los Angeles	197	258	396
Mt. Shasta (R)	763	1259	1387
Oakland	340	683	730
Point Arguello (R)	353	1220	
Red Bluff	377	430	378
Sacramento (U)	369	424	413
Sacramento	357	384	477
Sandberg (R)	574	806	702
San Diego	129	154	241
San Francisco (U)	276	1012	841
San Francisco	330	730	873
San Jose (U)	287	378	411
Santa Maria	340	862	722
COLORADO			
Alamosa	964	1972	2207
Colorado Springs	780	1383	1352
Denver	759	1265	1332
Grand Junction	696	1055	1161
Pueblo	679	1056	1228
CONNECTICUT			
Bridgeport	532	901	1045
Hartford	653	1238	1198
New Haven	588	1046	1137
DELAWARE			
Wilmington	565	880	914
DIST. OF COLUMBIA			
Washington (U)	460	674	773
Washington	489	708	793
FLORIDA			
Apalachicola (U)	85	92	171
Daytona Beach	22	22	83
Fort Myers	3	3	25
Jacksonville	65	67	164
Key West	0	0	0
Lakeland (U)	18	18	60
Miami	0	0	8
Miami Beach	0	0	0
Orlando	14	14	61
Pensacola (U)	119	138	195
Tallahassee	130	145	240
Tampa	16	16	60
West Palm Beach	0	0	7
GEORGIA			
Athens	386	495	495
Atlanta	352	441	511
Augusta	312	388	341
Columbus	279	349	404
Macon	273	340	343
Rome	470	630	583
Savannah	183	227	263
Thomasville (U)	124	142	218
IDAHO			
Boise	727	1234	1286
Idaho Falls 46W (R)	1026	1993	2077
IDAHO (Cont'd.)			
Idaho Falls 42NW(R)	1077	2080	2142
Lewiston	726	1262	1286
Pocatello	833	1538	1543
ILLINOIS			
Cairo (U)	483	626	681
Chicago (Midway)	657	984	1205
Chicago (O'Hare)	691	1096	
Moline	700	1106	1253
Peoria	724	1121	1195
Rockford	751	1253	
Springfield	639	915	1127
INDIANA			
Evansville	591	812	844
Ft. Wayne	705	1126	1260
Indianapolis	674	1018	1090
South Bend	690	1121	1289
IOWA			
Burlington	677	1034	1184
Des Moines	715	1136	1269
Dubuque	806	1362	1511
Sioux City	768	1200	1443
Waterloo	804	1295	1459
KANSAS			
Concordia (U)	648	889	1019
Dodge City	620	873	971
Goodland	742	1172	1333
Topeka	611	858	1010
Wichita	545	729	848
KENTUCKY			
Lexington	575	793	951
Louisville	596	846	862
LOUISIANA			
Alexandria	244	295	
Baton Rouge	171	214	242
Lake Charles	117	146	240
New Orleans (U)	69	86	146
New Orleans	132	162	176
Shreveport	251	294	358
MAINE			
Caribou	929	2099	2356
Greenville (U)	914	2093	
Portland	723	1562	1610
MARYLAND			
Baltimore (U)	411	603	725
Baltimore	536	820	910
Frederick	621	1013	911
MASSACHUSETTS			
Blue Hill Obs. (R)	583	1179	
Boston	503	946	1017
Nantucket	521	1009	1154
Pittsfield	723	1560	1687
Worcester	688	1419	
MICHIGAN			
Alpena	801	1872	1744
Detroit (City AP)	636	1061	1232
Detroit (M. Wayne Co.)	677	1122	
Detroit (Willow Run)	668	1077	1258
Escanaba (U)	808	1664	1892
Flint	709	1361	1468
Grand Rapids	638	1211	1471
Lansing	709	1320	
Marquette (U)	833	1738	1868
Muskegon	704	1284	1483
S. Ste. Marie	854	1911	2177
MINNESOTA			
Duluth	998	2031	2236
Internat. Falls	1106	2264	2490
Minneapolis	943	1667	1601
Rochester	883	1612	1718
St. Cloud	991	1786	1948
MISSISSIPPI			
Jackson	276	347	379
Meridian	313	394	428
Vicksburg (U)	249	310	319
MISSOURI			
Columbia	548	772	984
Kansas City	555	715	905
St. Joseph	634	918	1000
St. Louis (RFC)	503	701	810
St. Louis	551	771	878
Springfield	539	731	933
MONTANA			
Billings	836	1440	1595
Butte	1066	2502	2587
Glasgow	1092	1866	1948
Great Falls	878	1609	1765
Havre (U)	1036	1763	1915
Helena	934	1869	2038
Kalispell	1006	2141	2085
Miles City	960	1557	1695
Missoula	957	1912	1987
NEBRASKA			
Grand Island	759	1173	1281
Lincoln (U)	690	1011	1137
Norfolk	801	1300	1464
North Platte	844	1361	1409
Omaha	704	1049	1207
Omaha N. Omaha AP	749	1163	
Scottsbluff	835	1437	1460
Valentine	860	1470	1518
NEVADA			
Elko	858	1665	1724
Ely	883	1679	1749
Las Vegas	351	414	405
Reno	742	1445	1440
Tonopah	760	1192	1246
Winnemucca	795	1503	1527
NEW HAMPSHIRE			
Concord	745	1515	1636
Mt. Washington Obs. (R)	1325	4177	
NEW JERSEY			
Atlantic City	488	775	
Atlantic City (U)	505	754	766
Newark	485	746	951
Trenton (U)	504	819	922
NEW MEXICO			
Albuquerque	548	807	858
Clayton	634	1035	1064
Raton	750	1340	1430
Roswell	507	695	665
Silver City	464	688	
NEW YORK			
Albany	696	1299	1386
Binghamton	724	1388	1623
Buffalo	660	1204	1354
New York (U)	476	750	863
New York(LaGuardia)	432	658	824
Rochester	647	1228	1375
Schenectady	664	1197	1404
Syracuse	630	1196	1256
NORTH CAROLINA			
Asheville (U)	522	748	864
Cape Hatteras (R)	219	300	307
Charlotte	388	504	592
Greensboro	485	688	741
Raleigh	422	603	603
Wilmington	286	374	361
Winston-Salem	459	640	702
NORTH DAKOTA			
Bismarck	1076	1875	1989
Devils Lake (U)	1135	2034	2235
Fargo	1046	1839	1989
Grand Forks CAA	1114	2018	
Pembina	1123	1906	
Williston (U)	1070	1847	2038
OHIO			
Akron	672	1109	1216
Cincinnati (U)	486	670	831
Cincinnati	559	829	1026
Cincinnati Obs.	551	807	931
Cleveland	671	1210	1124
Columbus	611	951	1107
Columbus (U)	585	878	1012
Dayton	641	967	1096
Mansfield	670	1120	
Sandusky (U)	608	960	1077
Toledo	716	1180	1257
Youngstown	670	1182	1189
OKLAHOMA			
Oklahoma City	407	505	648
Tulsa	393	481	632
OREGON			
Astoria	537	1454	1270
Burns (U)	907	1747	1673
Eugene	581	1153	1183
Meacham	946	2063	1992
Medford	612	1004	1027
Pendleton	670	1132	1174
Portland (U)	497	887	926
Portland	548	1048	1067
Roseburg	557	999	1074
Salem	538	1044	1071
Sexton Summit (R)	800	1619	1496
PENNSYLVANIA			
Allentown	646	1067	1154
Erie	597	1074	1246
Harrisburg	593	923	1007
Philadelphia (U)	430	639	768
Philadelphia	577	914	889
Pittsburgh (U)	540	842	966
Pittsburgh	648	1062	1211
Reading (U)	540	849	935
Scranton	700	1250	1215
Williamsport	698	1186	1193
RHODE ISLAND			
Block Island	504	899	1036
Providence	573	1080	1186
SOUTH CAROLINA			
Charleston (U)	149	184	248
Charleston	216	278	322
Columbia	317	402	420
Florence	286	369	441
Greenville	367	476	552
Spartanburg	389	514	557
SOUTH DAKOTA			
Huron	982	1712	1622
Pierre	899	1452	
Rapid City	837	1411	1640
Sioux Falls	867	1484	1648
TENNESSEE			
Bristol	550	756	873
Chattanooga	477	643	670
Knoxville	481	626	710
Memphis (U)	367	454	503
Memphis	425	529	575
Nashville	509	657	647
Oak Ridge (U)	528	697	857
TEXAS			
Abilene	261	319	453
Amarillo	530	770	871
Austin	182	208	244
Brownsville	41	43	59
Corpus Christi	78	90	113
Dallas	237	282	352
Del Rio (U)	137	154	
El Paso	357	443	460
Ft. Worth	253	298	357
Galveston (U)	74	89	131
Galveston	73	84	132
Houston (U)	111	127	162
Houston	104	121	188
Laredo	81	85	91
Lubbock	421	564	688
Midland	307	373	452
Port Arthur	122	147	238
San Angelo	232	271	352
San Antonio	138	155	226
Victoria	106	123	131
Waco	206	242	295
Wichita Falls	294	356	524
UTAH			
Milford	756	1243	1404
Salt Lake City	730	1184	1240
Wendover	751	1120	
VERMONT			
Burlington	767	1645	1617
VIRGINIA			
Lynchburg	492	747	816
Norfolk	368	507	569
Richmond	439	720	741
Roanoke	511	739	826
WASHINGTON			
Olympia	690	1564	1460
Seattle (U)	536	1105	1097
Seattle	569	1120	1231
Seattle-Tacoma	607	1358	1382
Spokane	886	1642	1637
Stampede Pass (R)	1030	2680	2628
Tatoosh Island (R)	536	1837	1832
Walla Walla	664	1069	
Walla Walla (U)	624	983	1076
Yakima	799	1466	1410
WEST VIRGINIA			
Charleston	523	754	886
Huntington (U)	523	735	794
Parkersburg (U)	546	816	928
WISCONSIN			
Green Bay	829	1641	1733
La Crosse	798	1398	1551
Madison	816	1480	1544
Milwaukee	766	1462	1445
WYOMING			
Casper	931	1723	1796
Cheyenne	877	1611	1787
Lander	1030	1805	1956
Sheridan	936	1703	1842

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

NOVEMBER 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE	
								PROPERTY	CROPS			PROPERTY	CROPS			PROPERTY	CROPS			PROPERTY	CROPS			PROPERTY	CROPS			PROPERTY	CROPS
Alabama *																													
Alaska *																													
Arizona *																													
Arkansas	1	1	0	0	0																								
California										1	0	5	0	0	0	2	0									1	2	4	4
Colorado										0	0	4	0																
Connecticut *																													
Delaware *																													
Florida	1	1	0	0	3																								
Georgia *																													
Hawaii *																													
Idaho										0	1	4	0																
Illinois						0	0	3	0	0	0	4	0	0	0	3	0									0	1	3	0
Indiana														0	0	4	0												
Iowa	3	2	0	0	5																								
Kansas	8	1	0	4	6					0	1	5	3	0	0	4	0												
Kentucky *																													
Louisiana *																													
Maine														0	1	3	0					0	0	3	0				
Maryland	1	1	0	0	3																								
Massachusetts *																													
Michigan						0	0	5	0					0	0	4	0												
Minnesota										0	0	5	0					0	0	3	0	0	0	5	0				
Mississippi	1	1	0	0	4																								
Missouri	3	1	0	3	4																					0	6	4	0
Montana *																													
Nebraska										0	0	4	0	0	0	1	0	1	1	4	0	0	0	4	0				
Nevada																										0	0	5	3
New Hampshire																						0	0	2	0				
New Jersey	1	1	0	0	4																								
New Mexico										0	0	D	0																
New York																		0	0	5	0								
North Carolina *																													
North Dakota																		2	2	5	0								
Ohio *																													
Oklahoma	1	1	0	0	4	0	0	4	0	2	0	4	0	0	2	0	0												
Oregon										1	S	5	2					0	U	4	1					0	S	6	4
Pennsylvania										0	0	4	0																
Puerto Rico *																													
Rhode Island *																													
South Carolina *																													
South Dakota																		0	0	5	0								
Tennessee *																													
Texas	1	1	0	0	3																								
Utah *																													
Vermont *																													
Virginia *																													
Virgin Islands *																													
Washington										0	0	4	0					0	1/ 1	1/ 5	0					0	0	2/ 5	0
West Virginia *																													
Wisconsin	2	1	0	1	4					0	0	5	0	0	1	5	0	0	0	5	0								
Wyoming										0	1	4	0					0	5	3	0								

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
D Occurred; estimates not available.
S Several; Heavy rains and flooding; injuries result of automobile accidents.
U Unknown
1/ Heavy snowstorms.
2/ Heavy rain.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to 5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

NOVEMBER 1960

Significant flooding occurred in the Pacific Northwest during November. Maximum floods of record occurred at several long-term gaging stations in the Willamette River basin in Oregon. Most of the damages occurred on the creeks and small drainages. Flooding reported elsewhere was mostly minor.

MISSISSIPPI SYSTEM

Missouri Basin.--The flooding on the Grand River in Missouri from October 31 to November 2 resulted from heavy rains on October 29 to 31. The rainfall during this period ranged from 2.5 to 3.5 inches, with a small area around Trenton, Mo., receiving 5 inches. Some damage resulted to unharvested crops which were planted after the July flood.

Arkansas Basin.--Minor flooding occurred on the Neosho River in Kansas from October 31 to November 2 due to rainfall during the last 7 days of October. No damage was reported.

WEST GULF OF MEXICO DRAINAGE

The flooding on the Colorado River in Texas was a continuation of the flooding that began on October 29 at Smithville. The crest reached Wharton, Tex., on November 1, 0.6 foot above flood stage. The Colorado River receded within its banks on November 2. This light to moderate flooding was due to excessive rain concentrated in a small area around Austin. Damage in the City of Austin was heavy but was not due to river overflow. (See the previous issue of this publication).

Flood stages continued from the end of October through the first few days of November in the lower regions of the Guadalupe, Navidad, and Lavaca Rivers in Texas. Additional flooding occurred on the lower Guadalupe and over most of the watersheds of the Lavaca and Navidad from moderate rains on the 21st to the 23d. Only minor damage resulted from the latter flooding.

Minor flooding occurred on the lower Nueces to the 5th as a result of the October rains. Locally heavy rains of 3 to 4 inches on the 21st and 22d caused flash flooding on the lower Atascosa and lower Frio Rivers on the 22d and 23d. No damage was reported.

PACIFIC SLOPE DRAINAGE

Smith River Basin.--The heavy rains over northern California between the 23d and 26th caused the Smith River at Ft. Dick and Crescent City, Calif., to rise slightly above flood stage during the latter part of the month.

Coquille Basin.--Heavy rains on the 23d and 24th caused flooding on the Coquille River at Myrtle Point and Coquille, Oreg., from the 24th to the 26th. Runoff was heavy, as the ground was soaked from the general rains between the 10th and 22d. The heaviest rain on the 23d and the 24th was in the Coast Range, centered in the South Fork drainage of the Coquille River with an estimated average of from 6 to 10 inches in the 2-day period. The entire lower Coquille Valley was inundated, but no damage resulted since livestock and other movable property had been removed.

Columbia Basin.--Precipitation was below average for the month in southwest Montana and adjoining areas of Idaho. Elsewhere, above average precipitation was observed.

A storm series with closely spaced waves began moving through the Pacific Northwest beginning on the 10th and continued through the 25th with only 12- to 18-hour breaks between most storm centers. The strongest wave of the series moved inland on the 24th, bringing copious amounts of rainfall ranging from 3.5 to 6 inches over much of western Oregon. Serious flooding was confined to northwestern Oregon, particularly the lower Willamette River basin. Maximum floods of record occurred at several long-term gaging stations in the Willamette River basin between the 24th and 27th. The Molalla River above Pine Creek near Wilhoit, Oreg., crested at 14.9 feet on the 24th. The previously known maximum stage at this point was 13.17 feet in January 1948. Johnson Creek at Sycamore, Oreg., in the Portland, Oreg., area crested 13.78 feet on the 24th. The maximum crest at this point prior to this flood was 13.77 feet. The Clackamas River above Three Lynx crested at 15.12 feet on November 24, only 0.38 foot below the previously known maximum crest. The Santiam River at Jefferson, Oreg., crested near 22.2 feet, 7 feet over flood stage. This was the highest stage since February 1945. On the main stem of the Willamette River below Eugene, Oreg., peak stages accompanying this rise were generally 1 to 2 feet above flood stage and have been exceeded by floods within the past 3 to 5 years. Crest stages on tributary streams were well above flood stage.

Most of the flood damage that was experienced occurred on the creeks and small drainages of the larger Willamette tributary streams, heading in the Cascade Mountains and foot hills, below Albany, Oreg. Home basements and lumber yards were flooded, small bridges washed out or damaged, highways rendered impassable by slides, as the heavy rainfall filled ditches, sloughs, and gulleys to overflowing in nearby areas along these tributary streams. Sixteen families were evacuated over night in the Paradise Park-Carver area along the Clackamas River. Eight families were evacuated over night in the Barlow-Canby Grove Camp and Shady Dell area along the Mollalla River. Other families in these drainages had prepared to evacuate if necessary. There were reported losses of livestock, damage to roads and bridges, temporary pollution of the Canby, Oreg., water supply and loss of land use when a dike broke and logs and debris were scattered over the countryside. Flood damage along Milk Creek and the lower reaches of the Santiam and Pudding Rivers was primarily loss of topsoil, debris, dike damage, and loss of potential income. Seventy-five hundred acres of mint fields and farmland were inundated in Marion County, accounting for a sizable agricultural loss.

Washington Cascade Basins.--Substantial precipitation between the 15th and 25th caused the Chehalis, Snoqualmie, and Snohomish Rivers in Washington to exceed flood stage slightly. No damage was reported.

FLOOD STAGE DATA

(All dates in November unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From–	To–	Stage	Date
	Ft.			Ft.	
MISSISSIPPI SYSTEM					
Missouri Basin					
Grand: Chillicothe, Mo.	24	Oct. 31	1	24.9	Oct. 31-1
Sumner, Mo.	26	Oct. 31	2	28.9	1
Arkansas Basin					
Neosho: Iola, Kans.	15	Oct. 31	1	16.25	1
Chanute, Kans.	20	Oct. 31	1	20.85	1
Oswego, Kans.	17	2	4	17.9	4
WEST GULF OF MEXICO DRAINAGE					
Colorado: Columbus, Tex.	24	Oct. 31	1	25.9	Oct. 31
Wharton, Tex.	26	1	2	26.6	1
Navidad: Ganado, Tex.	21	Oct. 30	1	24.1	Oct. 31
		23	25	24.5	24
Lavaca: Edna, Tex.	21	24	24	21.2	24
Guadalupe: Gonzales, Tex.	20	Oct. 29	1	34.5	30
Cuero, Tex.	23	Oct. 31	3	31.2	1
Victoria, Tex.	21	Oct. 18	5	28.8	Oct. 19
				29.3	Oct. 23
				29.7	Oct. 26
				28.4	Oct. 30
				29.95	3
		23	25	23.5	24
Frio: Calliham, Tex.	12	23	23	19.1	23
Nueces: Calallen, Tex.	7	Oct. 16	5	9.3	Oct. 21
PACIFIC SLOPE DRAINAGE					
Coquille Basin					
Coquille: Myrtle Point, Oreg.	35	24	26	41.0	25
Coquille, Oreg.	21	25	26	21.9	25
PACIFIC SLOPE DRAINAGE (Cont'd.)					
Columbia Basin					
McKenzie: Coburg, Oreg.	11	24	25	13.9	24
Marys: Philomath, Oreg.	20	24	25	21.0	24
Santiam: Jefferson, Oreg.	15	18	18	15.0	18
		24	25	22.2	25
South Yamhill: Whiteson, Oreg.	38	24	26	43.5	25
Pudding: Aurora, Oreg.	15	24	30	20.8	25
Molalla: Canby, Oreg.	13	24	25	15.0	24
Tualatin: Dilley, Oreg.	12	20	21	12.3	21
		24	26	13.45	25
Farmington, Oreg.	29	26	29	30.45	27
Willamette: Harrisburg, Oreg.	12	24	25	14.2	25
Corvallis, Oreg.	20	26	26	20.4	26
Albany, Oreg.	20	25	26	20.8	26
Salem, Oreg.	20	25	26	20.9	26
Oregon City, Oreg.	12	25	28	13.8	27
Oregon City (Lower), Oreg.	25	24	28	29.5	27
Washington Cascade Basins					
Chehalis: Centralia, Wash.	63	25	26	64.95	25
Grand Mound, Wash.	14	25	26	14.8	25
Snoqualmie: Carnation, Wash.	51	11	11	51.3	11
		16	16	51.85	16
		18	18	51.8	18
		25	25	51.4	25
Snohomish: Snohomish, Wash.	23	18	18	23.3	18

* Provisional

RAWINSONDE DATA

Average monthly values

NOVEMBER 1960

Standard pressure surface (mb)	ALBANY, N. Y. (1006 MB.)						ALBUQUERQUE, N. MEX. (841 MB.)						AMARILLO, TEXAS (894 MB.)						ANCHORAGE, ALASKA (998 MB.)						ANNETTE, ALASKA (1004 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	86	1.3	84	222	3.3	30	1,619	3.5	57		0.0	30	1,095	3.2	65	253	5.1	30	30	- 5.0	74	13	3.3	29	37	4.9	82	129	6.4
1,000	30	137			224	4.7	30	187					30	176					30	14			34	3.1	29	67			136	5.8
950	30	554	3.7	69	265	12.0	30	609					30	594					30	418	- 3.6	61	18	6.4	29	479	2.2	80	147	12.6
900	30	992	1.7	68	273	16.7	30	1,054					30	1,036					30	847	- 4.2	60	41	4.7	29	919	- .3	82	164	15.0
850	30	1,451	- .2	63	273	20.0	30	1,530					30	1,509	8.4	39	268	11.5	30	1,296	- 6.3	63	116	5.8	29	1,374	- 3.4	81	184	17.3
800	30	1,935	- 1.6	54	273	24.1	30	2,026	5.8	45	269	5.2	30	2,009	7.5	34	273	13.8	30	1,768	- 8.9	64	138	7.0	29	1,852	- 6.1	78	199	17.3
750	30	2,449	- 3.7	51	272	26.0	30	2,550	3.2	44	274	10.3	30	2,535	5.9	30	264	18.5	30	2,264	-11.2	56	147	8.9	29	2,350	- 8.8	78	213	18.3
700	30	2,990	- 6.1	49	264	29.5	30	3,109	.0	43	279	15.7	30	3,102	2.8	27	265	19.2	30	2,793	-14.3	55	169	9.1	29	2,887	-12.1	74	223	17.9
650	30	3,565	- 9.0	43	267	33.8	30	3,697	- 2.8		272	20.6	30	3,694	- .8		265	22.2	30	3,346	-17.5	54	187	9.9	29	3,444	-15.5	66	228	19.0
600	30	4,183	-12.7	41	263	38.1	30	4,331	- 5.9		268	25.5	30	4,333	- 4.7		265	25.1	30	3,948	-21.2	54	196	10.5	29	4,051	-19.5	59	231	20.8
550	30	4,841	-16.4	41	262	41.2	30	5,004	- 9.9		267	27.6	30	5,005	- 8.9		267	28.8	30	4,579	-25.6	53	202	11.3	29	4,684	-23.7	55	233	21.4
500	30	5,555	-20.8	41	262	45.7	30	5,737	-14.8		271	28.0	30	5,745	-14.1		270	31.7	30	5,270	-30.0	49	214	15.0	29	5,382	-28.7	52	238	24.1
450	30	6,323	-26.0	41	266	49.0	30	6,516	-20.6		268	30.3	30	6,524	-20.2		269	35.2	30	6,005	-35.1	49	222	17.7	29	6,122	-33.8		236	22.0
400	30	7,170	-31.8	43	268	52.7	30	7,388	-26.8		266	32.6	30	7,400	-26.7		269	39.4	30	6,825	-41.0		220	21.6	29	6,946	-39.9		251	24.1
350	30	8,102	-38.1		269	52.1	30	8,338	-33.8		266	37.1	30	8,351	-33.4		268	42.4	30	7,721	-47.1		224	26.6	29	7,847	-46.1		248	19.0
300	30	9,149	-44.4		266	52.3	30	9,402	-41.8		268	43.1	30	9,416	-41.2		269	50.9	30	8,728	-52.6		230	27.0	29	8,857	-52.3		258	23.5
250	30	10,354	-51.0		272	55.0	30	10,614	-50.5		268	47.0	30	10,633	-49.4		270	58.1	30	9,901	-53.7		238	26.8	29	10,028	-55.1		266	24.3
200	29	11,792	-56.2		273	62.2	30	12,042	-57.6		269	56.5	29	12,074	-57.3		268	63.9	30	11,344	-51.5		243	22.0	29	11,453	-54.5		273	26.4
175	29	12,638	-57.6		273	58.9	30	12,880	-60.1		267	57.1	29	12,913	-59.8		270	65.5	30	12,213	-50.6		250	20.0	29	12,309	-54.3		269	26.2
150	28	13,616	-57.7		274	59.5	30	13,837	-62.4		265	53.6	29	13,870	-62.4		269	61.0	30	13,219	-50.1		251	18.8	29	13,299	-53.5		274	24.3
125	28	14,764	-59.1		270	54.6	30	14,954	-65.6		264	51.1	29	14,987	-65.2		268	54.2	30	14,412	-49.3		249	17.5	27	14,458	-53.6		277	22.7
100	28	16,158	-60.3		271	50.7	30	16,301	-68.3		269	43.3	29	16,338	-67.7		268	46.0	30	15,876	-49.3		254	16.1	27	15,891	-53.9		277	18.5
80	28	17,548	-60.4		271	46.8	30	17,639	-67.3		271	34.4	28	17,683	-67.4		269	36.3	30	17,340	-49.1		251	12.6	27	17,328	-53.6		284	15.7
60	27	19,342	-61.0		272	34.4	30	19,383	-64.5		267	22.0	25	19,425	-64.6		273	22.2	30	19,224	-49.8		254	10.7	27	19,177	-54.3		294	10.9
50	27	20,476	-60.9		275	22.7	30	20,497	-63.7		274	21.4	23	20,541	-63.6		277	21.4	30	20,415	-50.2		258	8.5	26	20,346	-54.6		328	5.6
40	26	21,858	-60.6		279	19.8	27	21,870	-62.2		277	15.9	20	21,920	-60.9		274	18.1	29	21,876	-50.5		262	5.4	25	21,774	-55.0		356	5.8
30	24	23,658	-59.4		283	17.9	25	23,660	-59.5		280	16.5	14	23,713	-60.0		275	21.2	28	23,750	-50.9		256	2.1	22	23,596	-55.1		44	5.2
25	23	24,803	-58.6		282	14.8	23	24,805	-58.2		283	17.3	13	24,856	-58.5		274	22.9	27	24,936	-50.6		23	1.0	20	24,769	-54.6		49	7.6
20	20	26,215	-57.2		284	15.9	20	26,212	-56.3		274	24.5	8	26,254	-57.5				24	26,399	-50.6		34	4.1	18	26,199	-54.8		80	8.4
15	12	28,026	-55.0				8	28,043	-54.1				5	28,052	-55.0				13	28,269	-52.2		110	4.7						
10	6	30,645	-50.2																											

Standard pressure surface (mb)	ATHENS, GA. (993 MB.)						BARROW, ALASKA (1016 MB.)						BARTER IS., ALASKA (1015 MB.)						BETHEL, ALASKA (998 MB.)						BISMARCK, N. DAK. (955 MB.)					
SURFACE	30	246	6.2	89	197	1.6	30	8	-23.2	59	115	5.8	28	15	-21.4	67	83	4.1	30	4	- 8.7	83	4	1.9	30	505	- 4.9	70	310	1.6
1,000	30	185					30	127	-20.5	56	99	10.1	28	123	-21.4	69	89	5.6	30	25			327	6.0	30	143				
950	30	612	9.9	60	288	2.7	30	510	-18.9	56	90	14.6	28	503	-20.7	68	99	11.5	30	421	- 8.3	80	33	3.9	30	548			295	4.7
900	30	1,060	8.9	51	271	6.6	30	911	-17.5	51	86	14.2	28	903	-18.7	62	96	9.5	30	843	- 9.6	75	175	3.1	30	978	- 1.4	59	302	12.0
850	30	1,532	7.8	41	268	11.7	30	1,339	-17.8	46	80	12.6	28	1,329	-18.5	53	113	6.4	30	1,283	-11.2	69	273	1.9	30	1,433	- 1.8	52	297	13.2
800	30	2,031	6.8	39	269	16.5	30	1,792	-18.5	40	81	10.5	28	1,781	-18.9	47	122	4.7	30	1,748	-12.8	63	271	3.7	30	1,914	- 4.0	49	297	16.9
750	30	2,559	4.8		271	18.3	30	2,267	-20.3	38	74	7.6	28	2,260	-21.0	44	157	2.1	30	2,232	-15.3	58	255	5.6	30	2,417	- 6.1	47	297	20.8
700	30	3,120	2.2		268	21.6	30	2,782	-22.4	33	65	5.8	28	2,766	-23.3	39	240	1.4	30	2,757	-18.0	51	272	6.6	30	2,959	- 8.7	47	293	26.0
650	30	3,711	- .7		272	23.7	30	3,318	-25.3		57	4.7	28	3,303	-26.2	38	282	2.3	30	3,306	-21.0	47	243	7.2	30	3,524	-11.5	41	292	30.1
600	30	4,351	- 4.3		270	29.1	30	3,901	-28.7		39	4.1	28	3,880	-29.5		301	6.0	30	3,896	-24.2	44	234	8.2	30	4,141	-15.1	36	292	35.4
550	30	5,024	- 8.5		273	29.9	30	4,513	-32.5		49	2.5	28	4,492	-33.3		291	8.0	30	4,520	-28.2	42	219	8.7	30	4,787	-19.4		282	39.1
500	30	5,764	-13.1		270	34.4	30	5,186	-36.6		341	3.1	28	5,159	-37.4		277	10.9	30	5,205	-32.7		207	10.9	30	5,497	-24.3	38	286	39.6
450	30	6,549	-18.7		269	37.1	30	5,905	-41.1		317	6.0	28	5,874	-41.7		282	14.4	30	5,935	-37.1		221	14.2	30	6,248	-29.6		285	46.6
400	30	7,427	-24.9		271	41.6	30	6,703	-46.1		299	7.0	28	6,671	-46.1		279	17.9	30	6,748	-42.1		224	17.9	30	7,087	-35.6		282	54.8
350	30	8,386	-31.6		270	49.7	30	7,583	-50.4		290	10.9	28	7,549	-50.4		276	26.0	30	7,642	-47.7		222	22.0	30	8,005	-41.7		279	62.2
300	30	9,459	-39.7		273	54.8	30	8,580	-53.8		285	13.8	28	8,546	-54.1		281	28.0	30	8,648	-52.0		226	24.3	30	9,035	-48.2		283	62.8
250	30	10,681	-48.9		274	60.0	30	9,750	-53.7		283	14.6	28	9,717	-53.4		283	24.7	30	9,825	-52.4		228	23.9	30	10,223	-53.2		282	65.3
200	30	12,118	-57.4		272	66.3	29	11,191	-50.7		272	14.2	28	11,163	-50.4		283	24.3	30	11,276	-50.1		230	20.2	29	11,650	-55.5		275	69.0
175	30	12,955	-60.9		270	64.5	29	12,063	-50.0		264	13.6	28	12,035	-49.9		287	21.6	30	12,150	-49.8		236	18.5	29	12,500	-56.2		276	66.6
150	30	13,909	-63.3		268	60.8	29	13,070	-49.9		266	14.0	28	13,044	-49.7		281	22.3	30	13,158	-49.7		238	16.9	29	13,479	-56.2		277	63.0
125	30	15,022	-66.2		272	49.7	29	14,263	-49.5		261	15.0	28	14,238	-49.4		280	20.8	29	14,345	-49.2		238	15.9	28	14,635	-56.6		278	47.0
100	30	16,367	-68.9		274	41.6	29	15,727	-49.0		258	16.9	28	15,703	-49.1		283	21.0	29	15,811	-48.9		228	14.2	28	16,049	-57.3		276	37.3
80	30	17,701	-68.0		271	34.4	29	17,191	-49.2		257	18.7	28	17,164	-49.2		282	22.7	28	17,275	-48.8		230	14.8	25	17,458	-58.3		281	28.0
60	29	19,444	-65.3		276	23.1	28	19,071	-49.6		259	20.0	27	19,043	-49.8		281	23.7	26	19,164	-49.1		225	13.6	24	19,264	-59.0		279	18.8
50	29	20,558	-63.2		269	23.1	28	20,264	-49.5		260	20.4	27	20,235	-50.0		285	22.9	26	20,360	-49.5		231	10.1	23	20,408	-59.4		287	13.6
40	29	21,938	-60.5		272	21.2	28	21,727	-49.3		263	21.2	25	21,688	-50.8		283	21.0	25	21,826	-49.9		223	6.6	23	21,806	-58.8		315	8.7
30	29	23,738	-58.3		274	19.8	27	23,608	-49.7		265	20.6	21	23,559	-50.6		299	25.1	24	23,705	-49.9		210	4.1	21	23,613	-58.1		341	7.6
25	29	24,891	-56.5		273	21.8	27	24,799	-50.2		273	22.2	19	24,755	-50.9		304	22.2	23	24,887	-50.1		178	1.6	16	24,760	-58.0		7	5.6
20	26	26,319	-54.3		271	35.2	24	26,265	-50.5		284	22.5	16	26,216	-51.4		309	28.2	18	26,356	-49.7		55	1.9	14	26,178	-56.9		11	6.2
15	22	28,178	-51.4		270	42.2	19	28,151	-51.4		269	18.5	7	28,065	-55.0				9	28,168	-50.6				8	28,018	-55.6			
10	5	30,975	-46.6				6	30,730	-52.8																					

Standard pressure surface (mb)	BOISE, IDAHO (919 MB.)						BROWNSVILLE, TEX. (1018 MB.)						BUFFALO, N. Y. (991 MB.)						BURRWOOD, LA. (1020 MB.)						CAPE HATTERAS, N. C. (1019 MB.)					
SURFACE	30	868	2.7	80	141	3.9	30	3	17.3	91	339	2.5	29	218	3.7	82	235	5.8	30	3	18.4	86	50	4.7	30	4	13.0	84	345	3.5
1,000	30	173					30	160	18.7	84	18	1.4	29	142					30	170	18.6	76	50	6.6	30	165	14.0	70	332	5.6
950	30	590					30	597	17.2	82	146	8.0	29	556	3.2	75	250	15.9	30	605	16.1	72	61	4.5	30	592	11.9	63	288	6.4
900	30	1,033	4.3	66	141	3.7	30	1,062	15.9	72	163	10.5	29	997	1.0	71	259	22.5	30	1,068	14.4	61	271	.6	30	1,048	9.7	60	262	9.7
850	30	1,498	2.5	60	227	5.6	30	1,547	13.9	64	180	9.9	29	1,455	- .8	63	257	24.3	30	1,549	12.6	51	279	4.5	30	1,522	7.6	54	255	15.3
800	30	1,986	- .2	61	248	7.8	30	2,057	11.5	60	204	4.9	29	1,937	- 2.8	60	259	26.4	30	2,057	10.8	48	272	6.2	30	2,020	6.1	43	260	18.8
750	30	2,496	- 3.1	62	247	12.8	30	2,594	9.5	48	230	4.5	29	2,444	- 5.1	58	263	29.1	30	2,590	8.3	43	278	9.7	30	2,548	4.4		262	22.5
700	30	3,044	- 5.8	60	269	16.5	30	3,166	6.3	43	261	4.9	29	2,986	- 7.6	53	265	31.1	30	3,160	5.3	39	277	12.6	30	3,108	1.9		263	25.6
650	30	3,618	- 8.9	58	269	20.8	30	3,764	2.7	41	257	8.9	29	3,556	-10.8	48	268	35.2	30	3,759	2.2	34	274	13.0	30	3,698	- 1.5		263	29.3
600	30	4,239	-12.2	50	269	25.1	30	4,413	- 1.1	36	268	11.3	29	4,171	-13.6	40	268	38.7	30	4,403	- 1.6	35	271	15.2	30	4,336	- 5.1		264	30.9
550	30	4,893	-16.2	53	263	29.5	30	5,093	- 5.0		261	13.0	29	4,822	-17.5	40	268	41.6	30	5,088	- 5.4		265	18.5	30	5,010	- 9.0		262	34.4
500	30	5,612	-20.8	52	264	34.8	29	5,846	- 8.8		256	15.9	29	5,536	-22.0	39	270	45.9	30	5,833	- 9.7		267	22.7	30	5,748	-13.6		263	36.9
450	30	6,377	-26.1	50	267	37.7	29	6,651	-14.3		256	16.3	29	6,296	-27.3	42	270	50.1	30	6,638	-15.1		269	28.2	30	6,537	-19.1		262	40.8
400	30	7,226	-32.4	48	264	38.5	29	7,539	-20.3		260	21.2	29	7,142	-33.0	39	270	53.2	30	7,519	-21.5		268	32.4	30	7,409	-25.4		259	46.2
350	30	8,154	-39.1		278	33.2	29	8,514	-27.6		266	26.6	29	8,069	-39.1		274	58.1	30	8,490	-28.5		267	35.8	30	8,366	-32.2		261	52.3
300	29	9,197	-46.4		278	38.7	29	9,604	-35.9		269	32.1	29	9,112	-45.4		270	64.1	30	9,578	-36.5		265	41.8	30	9,436	-40.3		262	55.8
250	29	10,388	-53.7		286	37.1	29	10,844	-45.8		270	37.7	29	10,311	-51.2		269	67.2	30	10,817	-46.1		267	49.5	30	10,657	-48.5		262	63.0
200	29	11,805	-58.1		282	39.6	29	12,293	-57.0		268	42.9	28	11,743	-54.9		271	66.8	30	12,264	-57.4		269	54.8	30	12,097	-56.7		269	67.8
175	28	12,638	-58.1		281	42.4	29	13,127	-62.5		266	44.5	28	12,594	-56.0		271	62.4	30	13,098	-62.3		267	58.1	30	12,937	-60.2		270	63.3
150	28	13,606	-59.0		274	40.8	29	14,066	-67.4		266	38.7	27	13,570	-56.6		267	56.5	29	14,043	-65.9		265	50.5	30	13,893	-62.6		270	62.8
125	28	14,751	-59.1		270	43.3	29	15,156	-70.3		266	32.4	23	14,724	-58.2		270	45.9	29	15,142	-69.0		269	45.3	30	15,010	-65.1		271	52.5
100	28	16,146	-60.3		272	32.4	29	16,470	-73.8		270	23.9	22	16,129	-59.8		271	35.6	29	16,464	-72.5		272	33.2	29	16,361	-67.5		271	43.3
80	27	17,538	-60.8		276	23.1	27	17,771	-73.0		277	13.4	19	17,524	-59.6		270	30.1	28	17,778	-71.3		277	22.0	29	17,708	-66.4		271	31.7
60	27	19,328	-60.2		282	15.3	27	19,479	-67.0		271	8.2	15	19,345	-59.8		274	19.6	28	19,497	-66.7		278	15.0	29	19,460	-64.1		269	22.3
50	26	20,466	-60.4		286	9.7	26	20,593	-63.8		268	6.6	13	20,490	-60.2		275	15.3	28	20,608	-63.2		271	13.4	29	20,581	-62.5		273	21.4
40	25	21,861	-60.0		296	4.9	26	21,973	-59.9		273	9.7	11	21,885	-59.7		280	13.8	28	21,993	-59.6		275	18.1	29	21,966	-60.1		277	21.2
30	24	23,663	-58.6		310	3.3	21	23,789	-55.7		276	18.3	9	23,690	-58.9				26	23,815	-55.7		272	21.6	26	23,767	-57.6		278	21.6
25	21	24,817	-57.3		339	5.2	23	24,959	-53.5		274	19.0	8	24,842	-57.7				26	24,981	-54.0		273	25.6	23	24,917	-56.4		273	25.3
20	21	26,232	-56.2		347	3.7	19	26,404	-50.9		270	18.5	8	26,256	-56.0				24	26,418	-52.3		279	28.4	20	26,345	-54.1		272	35.0
15	16	28,063	-55.5		62	2.9	11	28,288	-48.0										17	28,284	-49.6		273	38.9	11	28,206	-51.5			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

NOVEMBER 1960

CARIBOU, ME. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	191	- 0.3	83	231	4.7
1,000--	29	109				
950----	29	515	- 1.0	76	251	10.9
900----	29	950	- 2.8	75	268	16.7
850----	29	1,403	- 4.8	71	273	19.0
800----	29	1,880	- 5.7	63	275	23.3
750----	29	2,382	- 7.1	57	274	27.4
700----	29	2,921	- 9.5	54	273	31.5
650----	29	3,489	-11.9	54	271	34.0
600----	29	4,101	-15.3	54	274	36.1
550----	29	4,753	-19.2	50	273	39.1
500----	29	5,458	-23.5	46	271	44.5
450----	29	6,216	-28.7	46	270	47.8
400----	29	7,056	-34.7		268	51.7
350----	29	7,976	-41.2		269	54.8
300----	29	9,007	-48.3		268	61.6
250----	29	10,196	-52.7		271	62.8
200----	29	11,631	-54.3		268	59.3
175----	29	12,487	-54.6		267	55.6
150----	29	13,474	-54.8		268	52.3
125----	29	14,638	-55.4		262	39.1
100----	29	16,057	-57.0		267	33.4
80-----	29	17,468	-57.9		269	33.2
60-----	29	19,276	-59.5		272	26.8
50-----	29	20,415	-60.1		276	22.3
40-----	27	21,810	-60.1		280	18.8
30-----	24	23,604	-58.8		290	16.1
25-----	22	24,752	-58.1		286	15.2
20-----	19	26,163	-57.4		291	15.2
15-----	13	27,993	-56.7		295	18.3
10-----	7	30,546	-53.7			

CHARLESTON, S. C. (1020 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	26	13	9.2	87	348	3.7
1,000--	26	182	13.6	75	353	3.9
950----	26	608	13.1	67	300	4.1
900----	26	1,068	11.6	58	261	9.1
850----	26	1,545	9.7	51	260	14.4
800----	26	2,047	8.3	39	256	15.2
750----	26	2,576	6.2		260	17.7
700----	26	3,143	3.9		266	20.4
650----	26	3,737	.7		266	22.5
600----	26	4,381	- 3.2		265	25.1
550----	26	5,054	- 7.4		266	29.7
500----	26	5,802	-12.3		262	33.0
450----	25	6,590	-17.8		260	33.8
400----	25	7,474	-24.1		264	38.1
350----	24	8,436	-31.1		271	44.7
300----	24	9,513	-39.0		271	45.7
250----	24	10,739	-48.2		273	52.1
200----	21	12,184	-57.6		275	54.4
175----	21	13,022	-61.3		276	52.7
150----	21	13,969	-64.6		274	48.8
125----	21	15,078	-67.0		271	46.0
100----	21	16,418	-69.9		283	38.3
80-----	21	17,746	-69.1		281	33.0
60-----	21	19,479	-65.6		273	21.2
50-----	21	20,595	-62.9		272	23.3
40-----	21	21,980	-60.1		274	22.2
30-----	20	23,780	-58.5		273	27.2
25-----	20	24,931	-57.1		271	35.2
20-----	19	26,354	-54.3		269	45.1
15-----	16	28,218	-51.3		269	44.9
10-----	6	30,863	-47.3			

COLD BAY, ALASKA (998 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	27	0.2	82	289	2.9
1,000--	30	11			311	7.0
950----	30	418	- 1.6	75	281	2.9
900----	30	850	- 4.6	76	270	3.9
850----	30	1,298	- 7.1	73	248	7.6
800----	30	1,768	- 9.6	69	272	8.2
750----	30	2,260	-12.0	62	270	10.9
700----	30	2,789	-14.8	56	283	15.7
650----	30	3,343	-17.9	53	252	10.9
600----	30	3,942	-21.3	51	241	16.1
550----	30	4,568	-25.5	50	245	18.5
500----	30	5,263	-30.1	48	247	20.8
450----	30	5,997	-35.3		244	19.2
400----	30	6,817	-41.0		246	22.3
350----	30	7,714	-46.3		245	24.3
300----	30	8,727	-50.6		251	30.7
250----	30	9,912	-51.6		249	34.8
200----	30	11,362	-51.3		248	29.9
175----	28	12,231	-50.3		251	25.6
150----	28	13,239	-50.0		251	25.8
125----	26	14,447	-50.1		247	26.4
100----	24	15,905	-49.9		245	23.1
80-----	24	17,361	-50.9		242	17.3
60-----	23	19,229	-51.6		232	11.3
50-----	22	20,408	-52.4		226	9.1
40-----	21	21,848	-53.2		229	7.4
30-----	19	23,704	-53.4		184	5.1
25-----	19	24,878	-53.3		175	3.9
20-----	15	26,344	-52.5		135	.6
15-----	7	28,254	-51.9			
10-----						

COLUMBIA, MO. (989 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	238	4.1	78	202	4.5
1,000--	30	149				
950----	30	570	9.2	60	242	11.3
900----	30	1,011	4.8	56	265	17.7
850----	30	1,476	3.3	52	276	20.6
800----	30	1,968	2.7	43	274	22.5
750----	30	2,482	.5	41	[illegible]	26.2
700----	30	3,040	- 1.5	38	271	31.1
650----	30	3,619	- 4.5	37	272	36.3
600----	30	4,253	- 7.9		273	40.6
550----	30	4,917	-12.2		274	39.1
500----	30	5,647	-17.3		271	41.2
450----	30	6,421	-23.0		271	47.8
400----	30	7,282	-28.8		272	51.9
350----	30	8,226	-35.4		272	59.1
300----	30	9,283	-42.7		271	63.3
250----	30	10,493	-50.5		273	67.0
200----	28	11,926	-56.4		271	69.0
175----	28	12,772	-58.0		273	67.0
150----	27	13,737	-60.0		273	66.8
125----	25	14,874	-62.1		273	58.9
100----	22	16,247	-64.5		273	52.8
80-----	18	17,605	-64.0		273	38.7
60-----	15	19,369	-62.8		276	25.6
50-----	15	20,495	-61.7		282	19.2
40-----	13	21,884	-61.2		284	13.8
30-----	12	23,675	-53.5			
25-----	11	24,826	-57.9			
20-----	8	26,270	-55.3			
15-----						
10-----						

DAYTON, OHIO (984 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	297	3.2	76	227	4.9
1,000--	30	163				
950----	30	586	4.4	66	247	12.2
900----	30	1,021	3.1	63	256	18.7
850----	30	1,483	1.0	58	260	21.6
800----	30	1,970	.3	48	261	23.1
750----	30	2,484	- 1.7	43	262	26.2
700----	30	3,033	- 3.8	33	264	29.5
650----	30	3,613	- 6.5		265	34.4
600----	30	4,238	- 9.5		268	38.9
550----	30	4,902	-13.4		269	43.7
500----	30	5,624	-18.5		267	47.4
450----	30	6,395	-23.9	38	267	51.3
400----	30	7,252	-29.8		267	57.1
350----	30	8,191	-36.6		269	60.0
300----	30	9,243	-43.9		270	69.0
250----	30	10,449	-50.5		273	73.1
200----	30	11,882	-56.4		272	77.3
175----	30	12,727	-57.9		273	71.3
150----	30	13,697	-59.3		272	63.7
125----	30	14,834	-61.3		270	52.3
100----	29	16,209	-62.5		271	46.8
80-----	29	17,584	-63.1		271	35.8
60-----	26	19,358	-62.1		272	18.8
50-----	25	20,486	-61.9		270	18.7
40-----	22	21,878	-60.5		282	19.2
30-----	22	23,679	-58.6		285	17.5
25-----	19	24,829	-57.7		282	14.2
20-----	14	26,249	-55.9		299	16.5
15-----	11	28,100	-53.3			
10-----						

DENVER, COLO. (838 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,611	- 1.0	60	220	3.9
1,000--	30	179				
950----	30	598				
900----	30	1,036				
850----	30	1,496				
800----	30	1,988	4.7	42	248	6.4
750----	30	2,512	2.5	37	269	11.7
700----	30	3,067	- .2	36	282	16.1
650----	30	3,654	- 4.3	36	289	19.2
600----	30	4,282	- 8.2	35	288	24.5
550----	30	4,948	-12.3		286	31.9
500----	30	5,675	-17.1		285	33.2
450----	30	6,452	-22.9		280	34.4
400----	30	7,309	-29.5		277	38.3
350----	30	8,248	-36.6		274	42.9
300----	30	9,298	-44.7		274	49.2
250----	30	10,497	-52.8		274	52.1
200----	30	11,916	-58.6		270	57.1
175----	30	12,751	-60.1		270	57.9
150----	30	13,711	-61.3		270	54.4
125----	30	14,840	-62.8		270	46.4
100----	30	16,214	-63.9		270	37.5
80-----	29	17,583	-63.7		265	31.3
60-----	29	19,350	-62.6		271	22.9
50-----	29	20,477	-61.5		271	17.3
40-----	28	21,860	-60.6		270	10.5
30-----	25	23,654	-59.2		279	5.6
25-----	19	24,799	-58.4		285	6.4
20-----	12	26,204	-57.3		284	11.3
15-----	5	28,022	-57.1			
10-----						

DODGE CITY, KANS. (927 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	792	1.6	69	261	5.4
1,000--	30	171				
950----	30	590				
900----	30	1,029	7.0	42	267	6.8
850----	30	1,499	7.1	35	285	9.9
800----	30	1,996	5.2	34	283	14.2
750----	30	2,523	3.2	30	282	18.1
700----	30	3,078	.4	30	276	23.5
650----	30	3,667	- 3.0		270	27.8
600----	30	4,299	- 6.9		269	30.9
550----	30	4,967	-11.2		270	33.8
500----	30	5,697	-16.4		268	37.5
450----	30	6,471	-22.1		270	42.2
400----	30	7,338	-28.4		272	45.9
350----	30	8,282	-35.2		270	52.7
300----	30	9,339	-42.9		272	56.0
250----	30	10,547	-51.2		273	55.6
200----	30	11,976	-57.6		271	68.0
175----	29	12,810	-59.7		271	67.8
150----	29	13,770	-61.3		272	63.9
125----	29	14,895	-63.6		266	56.2
100----	27	16,265	-65.1		271	44.9
80-----	25	17,619	-65.6		267	33.8
60-----	25	19,379	-63.4		275	24.3
50-----	23	20,503	-62.7		280	17.1
40-----	20	21,884	-61.0		283	11.5
30-----	18	23,686	-59.1		272	13.0
25-----	16	24,836	-57.9		280	14.4
20-----	10	26,249	-56.1			
15-----						
10-----						

EL PASO, TEX. (886 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,197	6.0	36	14	2.9
1,000--	30	182				
950----	30	610				
900----	30	1,061				
850----	30	1,533	10.6	41	330	.8
800----	30	2,037	9.2	40	249	6.0
750----	30	2,567	6.7	37	251	11.7
700----	30	3,133	3.6	33	255	16.1
650----	30	3,727	.1		256	19.0
600----	30	4,367	- 4.0		254	20.6
550----	30	5,040	- 8.1		257	20.4
500----	30	5,782	-13.4		256	22.7
450----	30	6,569	-18.9		257	28.6
400----	30	7,443	-25.2		253	33.2
350----	30	8,400	-31.9		255	38.7
300----	30	9,472	-39.4		258	48.6
250----	30	10,696	-48.2		259	56.9
200----	30	12,134	-57.3		258	60.0
175----	30	12,970	-61.2		262	55.2
150----	30	13,921	-63.9		260	52.7
125----	30	15,029	-67.2		260	48.0
100----	30	16,367	-69.6		263	40.6
80-----	30	17,695	-69.5		264	29.9
60-----	30	19,426	-66.1		262	21.0
50-----	30	20,535	-64.7		271	20.0
40-----	28	21,904	-61.6		277	17.5
30-----	27	23,687	-59.6		270	21.0
25-----	24	24,831	-57.4		268	26.6
20-----	22	26,247	-55.4		271	32.3
15-----	10	28,068	-53.4			
10-----						

ELY, NEV. (810 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,908	- 2.0	70	190	4.9
1,000--	30	196				
950----	30	612				
900----	30	1,050				
850----	30	1,519				
800----	30	2,005	.7	61	189	4.9
750----	30	2,523	- .3	54	188	4.1
700----	30	3,073	- 2.8	49	240	9.1
650----	30	3,655	- 5.4	46	256	14.6
600----	30	4,284	- 8.7	41	262	19.0
550----	30	4,947	-13.0	41	263	22.7
500----	30	5,673	-17.9	39	264	27.0
450----	30	6,446	-23.4	34	260	30.7
400----	30	7,305	-29.9	36	257	34.0
350----	30	8,244	-36.8		256	33.4
300----	30	9,295	-44.8		265	30.9
250----	30	10,494	-53.0		263	36.7
200----	29	11,912	-57.9		269	41.4
175----	29	12,752	-59.7		[illegible]	42.9
150----	29	13,716	-59.9		272	36.9
125----	29	14,851	-61.8		268	34.8
100----	29	16,229	-62.9		269	29.1
80-----	28	17,596	-63.7		275	23.7
60-----	28	19,364	-62.5		260	19.0
50-----	28	20,490	-61.6		264	13.4
40-----	27	21,872	-61.2		264	10.7
30-----	25	23,663	-59.8		282	9.9
25-----	23	24,810	-58.5		324	7.2
20-----	20	26,215	-57.0		352	6.0
15-----	18	28,040	-55.2		314	6.6
10-----	6	30,723	-50.6			

FAIRBANKS, ALASKA (992 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	135	-18.8	64	360	2.3
1,000--	30	75				
950----	30	464	-13.7	58	85	5.1
900----	30	874	-12.9	62	112	6.4
850----	30	1,310	-11.8	60	142	5.1
800----	30	1,774	-12.7	54	184	3.3
750----	30	2,261	-15.1	54	221	3.5
700----	30	2,784	-17.7	56	255	4.5
650----	30	3,328	-20.9	53	264	6.8
600----	30	3,923	-24.3	51	254	9.7
550----	30	4,547	-27.9	50	251	12.8
500----	30	5,230	-32.7	47	251	15.9
450----	30	5,961	-37.3	55	250	18.5
400----	30	6,771	-42.7		253	22.9
350----	30	7,660	-48.9		252	24.9
300----	29	8,664	-54.0		253	24.7
250----	29	9,831	-54.7		255	19.8
200----	29	11,269	-51.7		256	16.1
175----	29	12,137	-50.8		259	16.1
150----	29	13,142	-50.5		258	15.5
125----	28	14,328	-50.1		260	14.4
100----	28	15,788	-49.6		262	13.8
80-----	28	17,248	-49.6		269	13.8
60-----	26	19,126	-50.0		271	12.0
50-----	26	20,316	-50.3		276	10.9
40-----	24	21,762	-50.3		282	9.3
30-----	22	23,641	-50.4		297	9.1
25-----	21	24,829	-50.2		307	8.4
20-----	19	26,277	-51.9		307	9.1
15-----	11	28,164	-52.9			
10-----						

FLINT, MICH. (988 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	234	2.8	83	232	7.4
1,000--	30	132				
950----	30	548	3.5	73	257	15.5
900----	30	987	1.7	67	265	20.0
850----	30	1,446	- .7	64	263	21.8
800----	30	1,929	- 2.5	53	265	23.3
750----	30	2,440	- 4.4	46	266	26.0
700----	30	2,981	- 6.9	40	266	28.0
650----	30	3,556	- 9.9		268	30.7
600----	30	4,171	-12.9	38	269	35.0
550----	30	4,829	-17.0	44	270	40.0
500----	30	5,540	-21.1	43	270	45.5
450----	30	6,305	-26.1		269	50.3
400----	30	7,153	-32.4	38	270	55.0
350----	30	8,082	-39.1		277	58.9
300----	30	9,123	-45.9		276	65.7
250----	30	10,319	-51.4		278	72.5
200----	30	11,754	-55.5		277	66.8
175----	30	12,604	-56.2		277	65.5
150----	30	13,583	-56.8		277	56.2
125----	30	14,736	-58.0		275	49.4
100----	29	16,137	-59.7		271	41.8
80-----	29	17,529	-60.2		273	31.7
60-----	29	19,324	-60.5		273	22.2
50-----	29	20,460	-60.4		277	18.8
40-----	29	21,851	-59.9		284	18.5
30-----	27	23,644	-58.8		297	13.6
25-----	25	24,789	-58.3		302	12.6
20-----	23	26,197	-56.9		305	10.7
15-----	18	28,044	-54.2		292	15.2
10-----	6	30,713	-49.9			

FORT WORTH, TEX. (1000 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	180	10.7	76	234	1.0
1,000--	30	175			348	2.7
950----	30	609	11.9	59	212	7.4
900----	30	1,058	11.5	56	230	9.9
850----	30	1,536	10.3	48	242	11.3
800----	30	2,039	8.3	42	251	11.9
750----	30	2,573	6.7	33	254	14.0
700----	30	3,134	3.8	37	256	17.5
650----	30	3,731	.2		258	22.0
600----	30	4,369	- 3.8		261	22.3
550----	30	5,047	- 7.8		261	25.5
500----	30	5,786	-12.6		266	29.3
450----	30	6,579	-18.3		265	32.6
400----	30	7,451	-24.4		265	39.8
350----	30	8,411	-31.3		262	49.0
300----	30	9,485	-39.4		264	55.4
250----	30	10,709	-48.4		267	64.9
200----	30	12,146	-57.5		268	69.8
175----	30	12,983	-60.8		270	65.9
150----	30	13,937	-63.1		270	59.3
125----	30	15,049	-66.7		267	52.7
100----	30	16,390	-69.1		268	43.3
80-----	29	17,724	-68.9		268	35.6
60-----	29	19,459	-65.1		273	22.9
50-----	29	20,574	-64.0		275	18.5
40-----	27	21,950	-61.6		272	19.8
30-----	27	23,748	-58.4		277	22.9
25-----	25	24,901	-56.8		276	24.3
20-----	25	26,322	-55.1		273	29.9
15-----	24	28,161	-52.7		275	30.7
10-----	6	30,733	-48.3			

GLASGOW, MONT (933 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	696	- 4.6	80	184	0.6
1,000--	30	140				
950----	30	545				
900----	30	976	- .2	62	277	9.3
850----	30	1,435	- .5	51	282	17.7
800----	30	1,917	- 3.0	51	281	19.8
750----	30	2,426	- 5.4	51	281	23.5
700----	30	2,966	- 8.1	51	285	24.9
650----	30	3,533	-11.7	51	287	27.8
600----	30	4,147	-15.4	49	289	31.7
550----	30	4,794	-19.8	44	290	36.3
500----	30	5,500	-24.6	44	289	40.2
450----	30	6,251	-29.9	40	283	45.7
400----	30	7,089	-36.2		284	49.2
350----	30	8,003	-42.8		285	57.7
300----	30	9,027	-49.3		287	63.1
250----	30	10,209	-54.1		289	62.2
200----	30	11,632	-55.9		282	59.1
175----	30	12,481	-56.1		285	54.8
150----	30	13,460	-56.5		286	48.6
125----	24	14,615	-56.0		284	36.9
100----	23	16,030	-56.1		282	30.1
80-----	23	17,446	-57.1		285	23.5
60-----	21	19,262	-58.0		289	14.0
50-----	21	20,410	-58.4		299	8.9
40-----	20	21,808	-58.1		318	7.6
30-----	19	23,628	-57.2		19	7.0
25-----	19	24,785	-56.7		44	8.4
20-----	18	26,201	-56.3		55	11.1
15-----	14	28,064	-55.0		47	10.1
10-----						

GRAND JUNCTION, COLO (855 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,474	1.4	60	125	5.2
1,000--	30	191				
950----	30	610				
900----	30	1,054				
850----	30	1,519			123	4.5
800----	30	2,012	3.6	43	161	7.6
750----	30	2,530	.8	45	219	8.0
700----	30	3,085	- 2.6	48	249	14.0
650----	30	3,672	- 6.0	48	252	19.8
600----	29	4,291	- 9.4	44	256	23.5
550----	29	4,957	-13.1	40	261	29.7
500----	29	5,680	-17.4	36	263	34.4
450----	29	6,456	-22.9		270	38.5
400----	29	7,314	-29.2		274	43.5
350----	29	8,255	-36.2		280	43.9
300----	29	9,306	-44.2		280	48.0
250----	29	10,506	-52.2		283	52.8
200----	29	11,931	-57.5		278	52.3
175----	29	12,770	-59.3		276	47.0
150----	29	13,733	-60.6		273	49.2
125----	29	14,864	-61.9		272	50.3
100----	29	16,235	-65.1		272	42.0
80-----	29	17,594	-64.7		272	33.8
60-----	29	19,357	-62.8		269	26.6
50-----	29	20,481	-62.3		281	14.8
40-----	28	21,857	-61.2		278	11.5
30-----	27	23,643	-60.0		288	7.8
25-----	25	24,786	-58.8		302	8.0
20-----	23	26,186	-57.3		315	6.4
15-----	18	28,023	-55.2		293	11.9
10-----	8	30,683	-51.1			

GREAT FALLS, MONT. (885 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,123	0.5	60	238	9.1
1,000--	30	129				
950----	30	544				
900----	30	983				
850----	30	1,445	1.2	50	243	19.4
800----	30	1,931	- 1.6	53	254	19.2
750----	30	2,439	- 4.6	55	270	19.8
700----	30	2,984	- 7.7	55	275	21.6
650----	30	3,551	-10.9	54	277	26.0
600----	30	4,170	-14.4	50	274	27.6
550----	30	4,819	-18.7	46	276	30.1
500----	30	5,530	-23.4	45	277	32.6
450----	30	6,285	-28.4	43	275	37.1
400----	30	7,130	-34.3	43	281	42.9
350----	30	8,051	-41.2		274	46.0
300----	30	9,083	-48.2		275	50.5
250----	30	10,266	-54.6		275	52.7
200----	30	11,683	-57.4		275	46.4
175----	30	12,527	-56.9		276	[illegible]
150----	30	13,504	-56.9		274	43.5
125----	30	14,659	-56.8		274	36.7
100----	30	16,071	-57.4		273	28.4
80-----	30	17,480	-57.7		276	22.7
60-----	30	19,291	-58.4		281	16.7
50-----	29	20,441	-58.4		288	10.5
40-----	26	21,852	-57.9		299	7.2
30-----	25	23,668	-57.2		303	2.5
25-----	24	24,824	-56.5		33	7.8
20-----	16	26,252	-55.3		51	9.1
15-----	12	28,105	-54.4			
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

NOVEMBER 1960

GREEN BAY, WIS. (988 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	210	0.9	83	267	5.4
1,000	30	112				
950	30	525	1.5	69	274	11.1
900	30	961	.7	64	271	13.4
850	30	1,419	- 1.0	61	274	17.1
800	30	1,901	- 3.2	58	275	18.7
750	30	2,408	- 5.4	48	272	22.3
700	30	2,949	- 7.9	45	272	24.3
650	30	3,520	-10.7	43	276	27.2
600	30	4,134	-14.2	41	277	30.9
550	30	4,786	-18.0	39	278	34.2
500	30	5,496	-22.5	37	277	38.9
450	30	6,258	-27.9		276	44.5
400	30	7,098	-33.7		277	44.7
350	30	8,022	-40.2		273	53.2
300	30	9,059	-46.5		273	60.0
250	30	10,255	-51.7		272	63.5
200	30	11,689	-55.0		272	65.9
175	30	12,542	-55.4		272	61.4
150	30	13,523	-56.3		275	52.7
125	30	14,677	-57.7		273	45.5
100	30	16,084	-58.5		274	39.6
80	30	17,484	-59.1		275	33.8
60	30	19,281	-60.4		282	21.0
50	29	20,418	-60.9		287	17.1
40	29	21,807	-60.2		287	16.3
30	27	23,605	-59.5		300	12.4
25	23	24,746	-58.8		307	12.4
20	21	26,137	-57.9		317	13.0
15	10	27,957	-56.2			
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GREENSBORO, N. C. (989 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	273	4.0	84	273	2.5
1,000	30	183				
950	30	608	8.6	58	278	8.2
900	30	1,052	7.0	55	272	12.0
850	30	1,522	6.2	43	270	16.5
800	30	2,018	5.2		270	17.7
750	30	2,546	3.7		270	20.8
700	30	3,102	.9		267	24.5
650	30	3,690	- 2.4		266	28.4
600	30	4,325	- 6.1		267	32.6
550	30	4,996	-10.3		264	35.0
500	30	5,729	-15.3		265	39.2
450	30	6,511	-21.0		262	42.9
400	30	7,378	-26.9		264	48.0
350	30	8,329	-33.1		266	53.0
300	30	9,396	-40.5		270	59.8
250	30	10,615	-49.1		271	63.5
200	30	12,053	-56.8		270	71.5
175	30	12,892	-60.2		270	66.6
150	30	13,849	-62.1		271	66.8
125	30	14,969	-64.7		272	58.1
100	30	16,322	-67.0		270	48.0
80	30	17,671	-66.5		274	37.9
60	30	19,420	-64.2		275	23.9
50	30	20,541	-62.6		273	21.4
40	30	21,923	-60.8		277	20.0
30	28	23,724	-58.8		278	22.2
25	24	24,873	-57.4		276	25.3
20	23	26,287	-55.9		275	28.2
15	19	28,133	-52.8		274	35.6
10	9	30,765	-48.8			

HILO, HAWAII (1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	11	20.1	86	249	4.9
1,000	30	152	21.9	77	245	2.7
950	30	597	18.9	81	78	4.5
900	30	1,060	15.7	84	79	8.2
850	30	1,544	12.6	84	74	8.9
800	30	2,053	10.6	75	74	9.1
750	30	2,591	9.4	42	75	10.1
700	30	3,160	7.3		78	9.7
650	30	3,768	4.1		77	9.7
600	30	4,414	.4		68	10.1
550	30	5,104	- 3.3		51	7.6
500	30	5,857	- 8.3		26	6.8
450	30	6,663	-13.6		335	5.8
400	30	7,555	-19.9		301	8.7
350	30	8,531	-27.4		297	14.6
300	30	9,624	-35.5		283	19.6
250	30	10,868	-45.1		278	30.5
200	30	12,323	-55.6		274	40.2
175	29	13,163	-61.2		275	38.5
150	29	14,107	-66.6		278	32.4
125	29	15,195	-71.9		289	21.8
100	28	16,496	-75.5		297	10.1
80	26	17,792	-73.4		315	5.2
60	24	19,504	-66.3		41	3.1
50	22	20,617	-63.0		99	7.6
40	19	22,004	-59.5		90	10.1
30	19	23,817	-56.4		93	9.3
25	18	24,976	-55.2		98	6.8
20	14	26,394	-53.7			
15	10	28,265	-50.4			
10						

INTERNAT. FALLS, MINN. (970 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	360	- 3.5	78	296	2.9
1,000	30	115				
950	30	521	- 3.4	77	280	4.7
900	30	949	- 3.9	73	303	8.9
850	30	1,400	- 4.4	61	311	12.2
800	30	1,877	- 5.8	53	306	13.8
750	30	2,379	- 8.1	53	300	17.1
700	30	2,914	-10.9	52	298	19.8
650	30	3,475	-14.1	49	293	24.1
600	30	4,086	-17.1	45	290	29.3
550	30	4,727	-21.0	42	288	32.8
500	30	5,432	-25.2	41	286	38.3
450	30	6,183	-30.6		284	41.6
400	30	7,018	-36.6		282	45.5
350	30	7,930	-43.0		278	50.3
300	30	8,954	-49.4		276	55.8
250	30	10,136	-53.5		277	60.8
200	30	11,571	-53.7		276	61.4
175	29	12,429	-53.6		277	56.9
150	29	13,419	-54.3		277	49.9
125	28	14,591	-55.0		277	43.7
100	28	16,016	-55.4		277	35.4
80	27	17,431	-56.5		278	26.8
60	22	19,253	-58.2		285	21.0
50	20	20,396	-58.8		288	19.2
40	16	21,798	-58.8		295	14.4
30	9	23,584	-59.3			
25	5	24,760	-57.0			
20						
15						
10						

JACKSON, MISS. (1010 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	101	8.4	85	46	0.8
1,000	30	178	9.8	76	96	1.9
950	30	604	11.1	56	239	2.1
900	30	1,058	10.6	46	276	7.2
850	30	1,534	10.0	41	271	11.5
800	30	2,037	8.7	40	262	13.8
750	30	2,568	6.4	42	267	16.7
700	30	3,133	3.5		272	19.4
650	30	3,728	.3		273	21.2
600	30	4,368	- 3.5		274	22.0
550	30	5,042	- 7.7		272	24.7
500	30	5,786	-12.3		275	27.2
450	30	6,574	-17.8		274	29.5
400	30	7,455	-23.9		275	33.4
350	30	8,416	-31.0		274	35.6
300	30	9,492	-39.1		275	40.4
250	30	10,718	-48.1		277	47.4
200	30	12,157	-57.6		277	56.7
175	30	12,991	-61.6		280	57.9
150	30	13,941	-63.9		277	59.1
125	30	15,052	-66.6		276	52.5
100	30	16,390	-70.0		282	42.6
80	30	17,717	-69.7		283	32.4
60	30	19,447	-65.3		285	24.7
50	30	20,561	-64.0		284	19.0
40	30	21,938	-60.7		274	20.0
30	29	23,736	-57.8		273	25.8
25	29	24,891	-56.0		276	26.6
20	27	26,316	-54.2		274	34.0
15	21	28,160	-51.3			
10	10	30,827	-46.1			

JACKSONVILLE, FLA. (1020 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	13.0	93	333	6.6
1,000	30	176	15.8	80	353	5.6
950	30	609	15.3	68	55	1.2
900	30	1,070	13.1	68	203	3.5
850	30	1,550	10.8	58	232	5.1
800	30	2,055	9.0	44	254	7.2
750	30	2,585	7.2	36	262	9.9
700	30	3,153	4.6		273	11.9
650	30	3,747	1.7		271	14.8
600	30	4,396	- 2.1		269	16.1
550	30	5,071	- 6.0		271	20.2
500	30	5,822	-10.8		269	24.3
450	30	6,614	-16.3		275	29.9
400	30	7,501	-22.3		272	36.7
350	30	8,468	-30.3		273	43.1
300	30	9,551	-37.5		272	47.6
250	30	10,784	-47.2		274	55.2
200	30	12,228	-57.3		273	56.5
175	30	13,063	-62.0		272	55.0
150	30	14,008	-65.2		272	55.6
125	30	15,109	-68.8		274	46.4
100	29	16,439	-71.0		277	40.0
80	29	17,760	-70.4		280	27.6
60	28	19,489	-65.9		280	15.2
50	28	20,606	-62.6		278	16.5
40	27	21,994	-59.5		279	18.1
30	27	23,809	-56.1		274	26.8
25	24	24,983	-54.3		274	31.5
20	23	26,421	-52.3		271	35.4
15	18	28,300	-49.0		267	49.5
10						

JOHNSTON IS., PACIFIC AREA (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	3	26.1	77	73	15.9
1,000	30	124	25.0	77	80	16.9
950	30	573	21.5	79	87	21.6
900	30	1,041	18.2	77	91	22.2
850	30	1,530	15.6	70	94	20.0
800	30	2,044	13.4	56	92	15.9
750	30	2,580	10.9	47	92	13.4
700	30	3,159	7.9	39	98	10.7
650	30	3,761	4.6	39	95	11.1
600	30	4,417	1.4		90	9.5
550	30	5,106	- 2.5		83	9.1
500	30	5,863	- 6.9		75	8.0
450	30	6,672	-11.9		81	9.3
400	30	7,574	-17.6		61	10.9
350	30	8,560	-24.8		26	3.9
300	30	9,663	-33.1		316	7.2
250	30	10,920	-42.9		281	12.0
200	30	12,389	-54.2		280	18.8
175	30	13,234	-60.4		286	21.2
150	30	14,181	-66.8		291	17.9
125	30	15,266	-73.4		296	13.6
100	27	16,550	-78.2		314	5.4
80	24	17,824	-76.2		58	5.6
60	19	19,526	-67.0		94	11.5
50	19	20,637	-62.9		97	15.7
40	18	22,026	-58.9		92	18.8
30	17	23,843	-55.6		89	16.9
25	16	25,016	-52.9		85	12.2
20	12	26,485	-49.1			
15						
10						

KING SALMON, ALASKA (999 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	15	- 6.3	77	17	3.9
1,000	30	8			29	5.6
950	30	408	- 5.6	69	23	4.9
900	30	833	- 7.0	70	344	5.1
850	30	1,279	- 8.5	68	303	1.7
800	30	1,748	-10.4	65	220	5.1
750	30	2,242	-12.3	59	233	5.8
700	30	2,768	-15.2	58	232	6.8
650	30	3,325	-18.2	57	218	8.5
600	30	3,920	-21.5	59	206	12.4
550	30	4,553	-25.5	55	206	14.4
500	30	5,243	-29.9	52	209	17.7
450	30	5,981	-35.1	51	216	18.3
400	30	6,800	-40.9		224	20.0
350	30	7,702	-46.2		229	20.8
300	30	8,711	-51.1		230	22.2
250	30	9,892	-51.9		237	24.9
200	30	11,342	-50.7		237	26.2
175	30	12,214	-49.9		239	22.3
150	29	13,226	-49.9		243	23.9
125	28	14,417	-49.6		243	21.4
100	27	15,878	-49.2		246	18.7
80	27	17,340	-49.5		249	15.0
60	23	19,196	-49.8		241	10.3
50	23	20,386	-50.5		242	7.6
40	23	21,840	-51.0		236	3.9
30	22	23,715	-51.1		234	.6
25	21	24,902	-50.8		50	2.1
20	20	26,358	-50.3		53	4.9
15	15	28,237	-50.5		53	10.7
10	5	30,800	-54.3			

KOTZEBUE, ALASKA (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	-13.7	71	83	8.0
1,000	30	69			88	11.7
950	30	458	-13.1	65	93	13.0
900	30	872	-13.1	67	107	8.9
850	30	1,307	-13.8	66	109	7.4
800	30	1,767	-15.0	64	112	7.8
750	30	2,252	-17.2	64	113	7.4
700	30	2,768	-19.6	59	125	7.8
650	30	3,312	-22.5	56	139	7.8
600	30	3,900	-26.0	53	146	7.2
550	30	4,523	-29.6	51	160	7.0
500	30	5,201	-33.9	50	176	7.8
450	30	5,927	-38.5		191	8.5
400	30	6,735	-40.5		203	8.2
350	30	7,621	-49.1		203	9.9
300	30	8,621	-53.5		207	12.2
250	30	9,791	-54.0		214	12.6
200	30	11,231	-51.2		225	14.6
175	29	12,103	-51.0		225	14.0
150	29	13,109	-50.2		226	14.4
125	29	14,301	-49.7		233	15.0
100	27	15,773	-49.0		236	13.8
80	27	17,239	-48.8		240	15.3
60	27	19,125	-49.4		239	15.7
50	27	20,319	-49.3		247	14.2
40	25	21,779	-49.4		242	13.2
30	24	23,655	-49.6		249	11.1
25	23	24,851	-49.4		255	8.5
20	19	26,314	-50.3		283	8.0
15	14	28,145	-53.1		358	3.3
10						

LAKE CHARLES, LA. (1020 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	12.2	88	45	4.5
1,000	30	172	14.2	73	82	8.0
950	30	606	14.2	65	124	5.1
900	30	1,064	13.2	63	219	3.9
850	30	1,544	11.5	56	262	7.8
800	30	2,051	10.0	50	264	10.9
750	30	2,588	7.5	47	265	13.2
700	30	3,151	4.4	43	267	15.5
650	30	3,752	1.2	42	267	16.9
600	30	4,393	- 2.4		270	20.4
550	30	5,077	- 6.2		271	23.1
500	30	5,820	-10.7		270	27.0
450	30	6,623	-16.0		266	32.6
400	30	7,504	-22.1		267	37.7
350	30	8,472	-29.2		268	42.9
300	30	9,555	-37.6		269	46.6
250	30	10,789	-46.9		268	54.4
200	30	12,233	-57.6		269	61.6
175	30	13,067	-62.0		272	64.7
150	30	14,013	-65.3		271	58.7
125	29	15,119	-67.5		270	48.4
100	28	16,453	-70.7		269	41.2
80	28	17,776	-70.9		274	29.1
60	27	19,502	-66.0		273	19.6
50	27	20,616	-63.2		276	18.1
40	26	21,999	-60.0		272	21.0
30	22	23,805	-56.7		273	26.0
25	17	24,942	-55.6		275	34.4
20	16	26,377	-53.1		272	36.7
15	13	28,259	-50.5		272	44.3
10	9	30,954	-46.2			

LANDER, WYO. (828 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,696	- 2.8	69	240	1.4
1,000	30	174				
950	30	590				
900	30	1,027				
850	30	1,486				
800	30	1,970	.4	50	247	2.1
750	30	2,484	- 1.1	44	267	7.8
700	30	3,035	- 4.3	45	275	14.6
650	30	3,605	- 8.0	44	279	22.3
600	30	4,234	-10.9	40	282	30.3
550	30	4,889	-14.2	37	284	31.5
500	30	5,615	-19.3	35	280	35.8
450	30	6,380	-25.0	35	276	39.8
400	30	7,236	-31.4	35	275	40.2
350	30	8,167	-38.7		276	46.4
300	30	9,209	-46.3		276	51.7
250	29	10,395	-53.6		274	59.3
200	29	11,812	-58.1		276	56.0
175	29	12,651	-59.2		276	53.8
150	29	13,617	-59.4		275	50.9
125	29	14,755	-60.9		272	40.0
100	29	16,137	-62.0		272	35.4
80	28	17,526	-61.1		275	24.7
60	28	19,310	-61.2		276	17.3
50	26	20,440	-60.8		277	12.2
40	24	21,824	-60.5		289	11.3
30	20	23,621	-59.2		338	6.0
25	20	24,766	-58.6		22	5.6
20	17	26,175	-57.2		34	8.5
15	8	27,999	-56.4			

LAS VEGAS, NEV. (941 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	660	7.9	56	254	5.1
1,000	30	154				
950	30	579				
900	30	1,032	11.2	39	355	3.3
850	30	1,507	8.8	38	315	1.9
800	30	2,006	6.2	37	236	3.5
750	30	2,532	3.8	34	240	7.0
700	30	3,091	1.0	34	253	9.5
650	30	3,677	- 2.5	30	257	11.9
600	30	4,314	- 6.3		254	17.1
550	30	4,979	-10.5		255	21.2
500	30	5,718	-16.5		258	25.8
450	30	6,494	-21.3		257	27.8
400	30	7,362	-28.2		255	30.7
350	30	8,306	-35.2		254	35.4
300	30	9,363	-43.1		255	40.6
250	30	10,570	-51.3		258	49.9
200	30	11,997	-57.3		257	51.3
175	30	12,839	-58.5		260	51.7
150	30	13,803	-60.8		258	49.7
125	30	14,930	-62.9		259	47.0
100	29	16,300	-65.7		260	42.2
80	28	17,656	-65.2		261	34.2
60	28	19,412	-63.9		263	27.8
50	26	20,535	-62.8		266	23.3
40	26	21,913	-61.5		270	22.3
30	24	23,707	-59.3		273	17.7
25	21	24,847	-58.0		274	16.9
20	16	26,248	-56.5		272	18.7
15	9	28,098	-53.4			

LIHUE, HAWAII (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	36	23.2	76	49	11.1
1,000	30	162	22.6	76	58	14.2
950	30	603	18.7	80	73	17.1
900	30	1,069	14.8	83	77	17.7
850	30	1,551	11.7	81	82	17.3
800	30	2,057	9.9	61	85	16.5
750	30	2,593	9.7		86	15.0
700	30	3,164	7.3		88	13.2
650	30	3,767	4.2		82	10.5
600	30	4,417	.5		84	9.5
550	30	5,103	- 4.0		64	7.4
500	30	5,855	- 8.9		50	6.6
450	30	6,659	-14.2		34	5.6
400	30	7,548	-20.1		353	8.9
350	30	8,523	-27.4		345	11.5
300	30	9,615	-35.8		335	14.0
250	30	10,857	-45.3		318	17.9
200	30	12,312	-55.9		305	22.9
175	30	13,151	-61.2		305	24.3
150	30	14,097	-66.1		302	24.5
125	30	15,189	-71.3		312	22.3
100	29	16,492	-75.4		317	14.8
80	28	17,787	-73.5		335	6.2
60	27	19,498	-66.6		66	3.9
50	27	20,611	-62.3		99	4.5
40	25	22,000	-58.9		112	2.5
30	25	23,817	-55.7		219	1.2
25	23	24,984	-53.7		244	2.1
20	19	26,411	-52.1		286	7.0
15	11	28,285	-48.6			

LITTLE ROCK, ARK. (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	79	6.0	90	240	2.1
1,000	30	176	8.8	73	247	2.7
950	30	601	9.9	59	257	7.2
900	30	1,053	9.2	52	275	9.5
850	30	1,526	8.2	45	274	13.2
800	30	2,025	6.7		275	15.3
750	30	2,556	5.5		278	17.3
700	30	3,116	3.1		272	20.8
650	30	3,711	- .5		276	24.5
600	30	4,349	- 4.5		276	26.8
550	30	5,021	- 8.8		270	27.0
500	30	5,762	-13.7		273	29.7
450	30	6,546	-19.3		275	31.3
400	30	7,421	-25.7		270	34.2
350	30	8,376	-32.4		270	35.4
300	30	9,446	-40.3		282	32.1
250	30	10,666	-49.1		282	46.4
200	30	12,101	-57.6			
175	30	12,938	-60.5			
150	30	13,893	-62.6			
125	30	15,010	-65.3			
100	30	16,359	-67.7			
80	30	17,698	-67.7			
60	28	19,444	-64.8			
50	28	20,558	-63.3			
40	28	21,935	-61.2			
30	26	23,734	-58.5			
25	25	24,885	-56.7			
20	23	26,312	-55.0			
15	21	28,167	-52.4			

McGRATH, ALASKA (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	103	-16.0	72	325	1.2
1,000	30	54				
950	30	450	-13.9	66	56	6.4
900	30	856	-10.3	68	67	6.4
850	30	1,298	-10.2	65	111	5.4
800	30	1,764	-11.8	63	140	3.3
750	30	2,260	-13.9	61	167	6.2
700	30	2,779	-16.4	61	193	6.6
650	30	3,330	-19.5	59	201	8.4
600	30	3,924	-22.9	62	202	9.7
550	30	4,551	-27.2	60	198	10.7
500	30	5,237	-31.8	58	199	12.2
450	30	5,972	-36.9		208	14.4
400	30	6,782	-42.4		205	16.1
350	30	7,673	-48.2		216	18.8
300	30	8,677	-53.0		218	20.6
250	30	9,851	-53.3		226	19.8
200	29	11,306	-50.9		231	20.0
175	29	12,176	-50.5		235	18.8
150	29	13,184	-49.6		242	19.0
125	28	14,378	-49.3		243	17.7
100	28	15,844	-48.7		242	16.5
80	28	17,313	-48.4		245	15.5
60	28	19,202	-49.4		250	10.7
50	28	20,395	-50.1		253	10.9
40	28	21,853	-50.3		243	8.7
30	23	23,712	-50.4		231	6.6
25	22	24,889	-50.3		239	3.7
20	20	26,350	-50.7		7	4.1
15	12	28,219	-51.6			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

NOVEMBER 1960

Standard pressure surface (mb.)	MEDFORD, OREG. (971 MB.)						MIAMI, FLA. (1017 MB.)						MIDLAND, TEX. (919 MB.)						MONTGOMERY, ALA. (1015 MB.)						NANTUCKET, MASS. (1016 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	401	4.1	87		0.0	30	4	20.8	85	18	3.7	29	871	7.3	74	201	2.3	30	61	7.8	86	316	2.9	30	14	7.2	82	277	3.5
1,000--	30	162					30	154	22.0	75	40	7.0	29	173					30	184	10.6	75	38	2.1	30	143	8.2	73	263	5.4
950----	30	578	5.4	75	291	.8	30	596	18.9	74	72	10.1	29	600					30	610	11.8	58	99	.6	30	564	6.3	65	264	11.5
900----	30	1,023	4.6	67	155	3.3	30	1,062	15.7	75	77	8.4	29	1,049	10.0	59	192	2.9	30	1,065	10.6	49	265	6.2	30	1,009	4.1	59	270	15.5
850----	30	1,488	2.5	64	197	8.5	30	1,546	12.6	73	69	5.1	29	1,526	10.9	49	244	7.2	30	1,541	9.9	40	275	9.9	30	1,472	2.5	50	268	19.0
800----	30	1,976	.0	61	219	13.6	30	2,054	10.6	60	74	2.3	29	2,030	9.2	42	250	11.1	30	2,044	8.7	35	277	14.0	30	1,962	1.2	42	268	21.8
750----	30	2,490	- 2.2	63	236	15.3	30	2,590	8.9	43	296	1.2	29	2,563	7.1	34	259	13.8	30	2,575	6.7		271	16.9	30	2,476	- .3	40	265	24.9
700----	30	3,038	- 4.9	57	249	19.6	30	3,160	6.8	29	286	3.7	29	3,128	4.0	31	259	17.3	30	3,140	3.9		273	18.7	30	3,030	- 2.6	37	264	29.9
650----	30	3,612	- 8.3	53	253	20.8	30	3,763	3.8		273	5.4	29	3,722	.5		256	19.6	30	3,734	.4		271	20.2	30	3,609	- 5.7	36	264	35.2
600----	30	4,235	-12.0	51	256	21.2	30	4,413	.3		283	7.8	29	4,364	- 3.2		258	21.2	30	4,377	- 3.2		271	23.3	29	4,237	- 9.7	34	263	38.5
550----	30	4,889	-16.0	51	258	24.3	30	5,097	- 4.2		268	9.9	29	5,040	- 7.6		256	23.7	30	5,057	- 7.2		265	26.2	29	4,896	-14.2		262	38.3
500----	30	5,608	-20.5	49	262	26.4	30	5,851	- 8.8		271	9.7	29	5,783	-12.3		259	27.2	30	5,798	-12.0		268	29.9	29	5,621	-18.8	33	265	41.2
450----	30	6,373	-26.1	50	258	25.6	30	6,654	-13.9		276	13.2	29	6,574	-18.1		259	31.1	30	6,591	-17.1		269	32.6	29	6,389	-24.1		264	44.3
400----	30	7,223	-32.0	45	266	28.6	30	7,546	-20.3		280	16.5	29	7,451	-24.3		256	37.3	30	7,471	-23.4		269	39.2	29	7,248	-30.0	39	262	50.7
350----	30	8,153	-39.0		263	31.9	30	8,521	-27.9		277	20.4	29	8,411	-31.1		258	45.5	30	8,433	-30.7		267	45.5	29	8,188	-36.1	39	263	55.2
300----	30	9,193	-46.3		265	36.3	30	9,609	-36.3		282	25.6	29	9,486	-39.0		260	53.6	30	9,509	-39.1		267	52.7	29	9,243	-42.9		262	63.7
250----	30	10,385	-53.6		271	38.1	30	10,847	-46.1		275	33.0	29	10,712	-48.1		262	66.1	30	10,736	-48.0		269	61.2	29	10,451	-51.0		268	66.6
200----	30	11,802	-58.5		276	35.8	30	12,294	-57.2		267	41.4	29	12,153	-57.5		265	66.5	30	12,176	-57.3		270	68.8	29	11,882	-56.8		276	62.8
175----	30	12,641	-58.4		273	36.1	30	13,128	-62.6		266	41.0	28	12,985	-61.1		265	63.1	30	13,011	-61.7		271	65.9	28	12,733	-58.3		274	62.6
150----	30	13,611	-58.9		272	32.4	30	14,066	-67.8		267	35.8	28	13,938	-63.6		264	56.5	30	13,959	-64.4		269	61.2	28	13,702	-59.3		273	50.5
125----	30	14,753	-59.7		266	31.1	30	15,153	-71.1		271	30.5	28	15,049	-66.7		264	48.0	30	15,068	-67.4		268	54.8	28	14,837	-61.3		273	48.4
100----	30	16,146	-61.1		266	26.4	30	16,463	-74.1		278	21.4	25	16,394	-69.8		264	39.6	30	16,403	-69.8		272	43.3	28	16,219	-62.3		271	39.2
80-----	30	17,531	-60.9		273	23.1	30	17,763	-73.2		290	12.6	23	17,718	-69.7		265	28.0	29	17,732	-69.3		270	33.4	28	17,596	-62.7		268	31.9
60-----	30	19,320	-61.0		271	13.4	30	19,470	-67.5		289	6.6	23	19,447	-65.9		265	19.8	28	19,463	-65.5		273	22.0	27	19,375	-62.4		272	22.3
50-----	28	20,464	-60.5		268	10.5	30	20,581	-63.2		282	6.6	22	20,558	-64.0		272	19.4	27	20,580	-63.2		274	19.0	27	20,504	-61.7		275	20.0
40-----	26	21,853	-60.3		290	7.2	30	21,969	-58.7		269	8.0	20	21,931	-62.3		268	17.9	27	21,957	-60.8		275	22.3	26	21,886	-61.0		281	18.1
30-----	24	23,651	-59.3		317	4.5	24	23,799	-55.9		283	11.3	20	23,722	-58.7		269	22.2	26	23,764	-57.4		274	23.1	24	23,680	-59.5		280	19.8
25-----	21	24,797	-58.2		2	4.5	23	24,965	-54.2		280	13.8	17	24,872	-57.3		273	25.1	26	24,919	-56.3		275	25.8	24	24,823	-58.5		282	20.4
20-----	18	26,215	-56.8		60	6.6	21	26,399	-52.0		270	16.9	16	26,289	-55.2				24	26,344	-53.9		271	31.7	24	26,231	-57.0		287	22.9
15-----	12	28,062	-54.3				15	28,284	-48.1		270	23.9	9	28,186	-52.6				15	28,199	-50.8		271	43.1	20	28,065	-54.3		285	27.2
10-----																									11	30,679	-50.2			

Standard pressure surface (mb.)	NASHVILLE, TENN. (1001 MB.)						N. Y. INT. AP, IDLEWILD (1019 MB.)						NOME, ALASKA (1005 MB.)						NORFOLK, VA. (1021 MB.)						NORTH PLATTE, NEBR. (918 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	29	177	4.6	82	231	1.4	30	5	7.1	73	287	5.4	30	7	- 9.9	76	45	7.0	30	9	8.5	85	275	2.7	30	848	- 3.4	77	330	3.9
1,000--	29	182			315	.8	30	155	7.5	64	281	8.9	30	45			44	5.6	30	178	10.7	69	265	4.9	30	165				
950----	29	601	7.6	59	247	10.5	30	577	6.0	56	276	13.2	30	440	-10.4	73	69	5.4	30	603	9.5	58	276	8.7	30	574				
900----	29	1,048	6.5	51	256	13.4	30	1,018	4.0	50	271	16.7	30	856	-11.8	73	72	3.3	30	1,052	7.5	48	271	12.0	30	1,007	.9	66	302	6.0
850----	29	1,517	5.8	48	260	14.4	30	1,481	2.0	50	270	21.0	30	1,293	-13.2	73	47	3.1	30	1,522	6.2	41	269	15.3	30	1,470	3.5	47	299	11.3
800----	29	2,011	4.2	40	268	17.3	30	1,969	.2	48	274	25.1	30	1,753	-14.7	69	74	2.1	30	2,017	4.7	37	265	19.0	30	1,960	1.3	45	299	14.0
750----	29	2,537	2.7		274	22.7	30	2,486	- 1.5	42	271	27.6	30	2,241	-16.5	61	139	.6	30	2,540	2.8	35	263	24.5	30	2,475	- .7	43	291	18.3
700----	29	3,091	.2		273	26.6	30	3,033	- 3.3	35	266	32.4	30	2,757	-19.0	58	221	2.7	30	3,098	- .1	34	261	27.4	30	3,027	- 3.1	37	291	24.5
650----	29	3,678	- 2.5		273	28.0	30	3,616	- 6.3	33	265	34.8	30	3,301	-22.1	57	207	4.5	30	3,682	- 3.3	31	263	31.9	30	3,601	- 6.4	38	289	25.1
600----	29	4,314	- 6.0		273	30.1	30	4,238	- 9.9	32	263	39.6	30	3,891	-25.6	54	209	4.5	30	4,317	- 6.7		265	35.4	30	4,232	-10.3	40	283	29.9
550----	29	4,984	-10.0		272	32.1	30	4,900	-14.2		266	42.7	30	4,510	-29.6	50	220	5.6	30	4,983	-10.9		265	39.6	30	4,890	-14.3	35	283	35.6
500----	29	5,719	-15.0		272	36.5	30	5,620	-18.8		266	46.0	30	5,191	-33.8	48	202	6.6	30	5,716	-15.5		265	44.9	30	5,614	-19.2	33	282	36.3
450----	29	6,501	-20.8		268	39.1	30	6,390	-24.3		266	52.7	30	5,919	-38.8		187	7.8	30	6,497	-21.0		266	48.2	30	6,380	-24.7	34	282	43.3
400----	29	7,368	-26.8		267	46.4	30	7,245	-30.2		268	53.6	30	6,723	-43.8		183	9.5	30	7,363	-27.4		262	53.2	30	7,239	-30.6		280	43.9
350----	29	8,319	-33.4		270	49.5	30	8,183	-36.6		267	56.7	30	7,610	-49.0		189	12.4	30	8,311	-34.0		263	58.5	30	8,174	-37.5		282	49.7
300----	29	9,385	-41.4		268	54.2	30	9,236	-43.5		268	61.6	30	8,611	-53.2		176	13.8	30	9,374	-41.4		266	61.4	30	9,223	-44.8		279	52.1
250----	29	10,599	-50.3		270	64.5	30	10,444	-50.6		268	68.2	30	9,785	-52.7		184	12.6	30	10,588	-50.0		268	66.1	30	10,422	-52.4		278	56.7
200----	29	12,028	-58.1		271	65.1	30	11,877	-56.4		273	72.1	30	11,235	-50.5		209	14.6	29	12,020	-57.0		272	68.8	30	11,848	-57.6		275	62.6
175----	29	12,864	-60.6		273	61.2	30	12,722	-58.3		273	66.6	30	12,107	-50.0		222	15.0	29	12,860	-59.5		272	67.0	30	12,689	-58.8		274	62.6
150----	29	13,820	-61.9		273	59.7	30	13,689	-59.3		274	59.5	30	13,115	-49.8		226	14.6	29	13,820	-61.9		269	62.6	30	13,655	-59.7		272	58.1
125----	29	14,937	-64.9		272	55.2	30	14,827	-61.1		272	53.0	30	14,311	-49.0		227	14.8	29	14,942	-64.4		270	56.5	30	14,792	-60.9		274	49.5
100----	29	16,291	-67.7		273	45.3	30	16,208	-62.4		272	42.0	30	15,779	-48.2		229	14.8	29	16,300	-66.1		270	49.9	30	16,173	-63.1		275	39.4
80-----	28	17,634	-67.6		273	36.1	30	17,586	-62.4		272	33.0	30	17,248	-48.6		236	14.8	29	17,654	-65.7		273	34.8	30	17,547	-62.6		274	29.3
60-----	28	19,378	-65.3		276	24.5	30	19,362	-62.1		275	22.5	30	19,138	-48.9		238	13.6	29	19,411	-63.2		265	22.7	29	19,323	-62.1		283	18.7
50-----	27	20,488	-63.7		268	25.5	29	20,492	-61.5		276	18.5	30	20,335	-49.2		236	12.8	29	20,536	-62.2		270	21.0	29	20,451	-61.6		285	17.3
40-----	27	21,864	-61.6		276	23.5	29	21,878	-60.6		278	18.1	29	21,804	-49.3		235	11.1	29	21,920	-60.7		281	18.7	28	21,834	-60.9		286	11.1
30-----	26	23,657	-59.7		276	23.5	29	23,674	-59.7		284	16.7	27	23,687	-49.7		240	7.0	27	23,708	-58.6		276	20.0	23	23,631	-59.6		303	5.2
25-----	25	24,800	-58.3		283	22.3	27	24,815	-58.5		279	18.1	25	24,871	-49.8		247	5.8	27	24,858	-57.1		278	25.5	20	24,775	-58.8		277	5.2
20-----	25	26,209	-56.4		283	23.7	24	26,229	-56.7		278	18.3	25	26,332	-49.8		239	3.1	25	26,275	-55.5		279	26.6	18	26,187	-57.6		275	9.5
15-----	22	28,052	-53.9		285	33.4	21	28,066	-54.3		284	20.6	21	28,219	-50.1		306	4.1	20	28,130	-51.6		272	30.5	12	28,036	-54.9			
10-----	9	30,654	-49.4										9	30,806	-52.0				10	30,743	-47.1									

Standard pressure surface (mb.)	OAKLAND, CALIF. (1018 MB.)						OKLAHOMA CITY, OKLA. (974 MB.)						OMAHA, NEBR. (968 MB.)						PEORIA, ILL. (994 MB.)						PITTSBURGH, PA. (977 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	6	9.2	87	114	3.3	29	392	6.6	77	190	2.3	30	403	0.5	76	263	3.7	30	201	1.9	83	226	4.1	30	353	3.0	76	239	4.1
1,000--	30	157	10.6	77	126	3.1	29	173					30	139					30	147					30	165				
950----	30	583	9.6	70	199	3.3	29	598	9.2	60	209	5.4	30	556	2.8	60	272	5.8	30	562	4.6	65	253	14.0	30	580	4.7	68	251	11.3
900----	30	1,032	8.0	62	225	4.1	29	1,045	9.4	49	245	13.2	30	993	3.3	51	289	12.8	30	1,005	3.5	59	263	17.3	30	1,023	2.9	66	263	17.9
850----	30	1,502	6.2	56	238	6.0	29	1,518	8.4	45	259	14.8	30	1,456	2.4	41	292	14.6	30	1,467	1.7	54	264	19.8	30	1,485	1.1	62	264	22.3
800----	30	1,998	3.9	53	245	8.9	29	2,019	6.9	37	263	16.9	30	1,944	.6	36	286	15.7	30	1,955	.1	45	266	22.0	30	1,971	- 1.0	62	266	24.7
750----	30	2,518	1.1	51	248	12.4	29	2,547	5.0	29	262	19.2	30	2,457	- 1.6	33	283	18.1	30	2,471	- 1.7	39	268	24.3	30	2,484	- 3.3	60	263	29.5
700----	30	3,073	- 2.2	46	244	12.6	29	3,108	2.6		266	21.4	30	3,006	- 4.2	31	283	21.4	30	3,018	- 4.1	36	265	27.4	30	3,029	- 5.7	55	263	33.4
650----	30	3,653	- 4.9	34	248	15.0	29	3,700	- 1.0		265	24.9	30	3,580	- 6.9		280	26.8	30	3,599	- 6.8	36	264	31.3	30	3,606	- 7.8	49	262	35.6
600----	30	4,286	- 8.7	37	248	17.7	29	4,337	- 5.3		267	27.8	30	4,208	-10.5	32	276	30.7	30	4,221	-10.3	33	268	36.5	30	4,228	-11.2	42	266	39.4
550----	30	4,948	-12.7	34	261	20.8	29	5,007	- 9.6		268	30.7	30	4,863	-14.4		277	33.8	30	4,879	-14.3		269	39.8	30	4,887	-14.9	40	269	45.5
500----	30	5,677	-17.6	34	261	24.1	29	5,745	-14.5		270	32.8	30	5,589	-19.4		277	37.9	30	5,603	-19.0		268	44.9	30	5,607	-19.7		268	49.2
450----	30	6,451	-23.2	37	260	28.0	29	6,528	-19.9		271	37.5	30	6,355	-25.1		274	39.1	30	6,370	-24.3		270	47.6	30	6,377	-25.0		268	48.8
400----	30	7,311	-29.6	36	267	29.1	29	7,399	-26.2		271	41.4	30	7,210	-31.2		275	45.1	30	7,228	-30.6		266	55.0	30	7,229	-30.9		271	51.1
350----	30	8,251	-36.6		272	33.2	29	8,351	-33.4		269	48.8	30	8,143	-37.8		274	50.1	30	8,164	-37.2		267	60.0	30	8,165	-37.0		273	56.2
300----	30	9,302	-44.5		273	38.9	29	9,415	-41.7		267	53.6	30	9,191	-44.7		273	53.6	30	9,214	-43.7		267	61.8	30	9,216	-43.8		274	62.8
250----	30	10,503	-52.0		270	45.7	28	10,628	-49.5		269	61.4	30	10,391	-51.8		275	59.5	30	10,420	-50.3		265	66.8	30	10,423	-50.5		280	66.8
200----	30	11,930	-57.3		269	49.0	28	12,064	-57.0		271	69.0	30	11,820	-56.4		277	56.5	30	11,857	-55.9		265	68.8	30	11,859	-55.6		275	66.5
175----	29	12,773	-58.2		273	44.9	28	12,902	-59.6		272	67.0	30	12,665	-57.7		275	57.7	30	12,704	-57.0		266	65.7	30	12,705	-58.0		272	65.9
150----	26	13,739	-59.3		268	43.1	27	13,867	-61.7		270	59.7	30	13,635	-58.9		274	49.5	30	13,678	-58.3		268	62.6	30	13,675	-59.2		275	63.7
125----	25	14,884	-61.4		264	39.8	27	14,985	-65.3		270	52.8	30	14,774	-60.5		273	48.4	28	14,813	-60.1		271	57.1	29	14,808	-60.9		276	49.4
100----	24	16,266	-63.0		268	35.2	26	16,337	-67.1		269	44.7	30	16,158	-62.1		275	37.5	27	16,196	-61.5		268	47.6	29	16,191	-62.6		278	44.1
80-----	24	17,639	-63.2		271	27.4	25	17,681	-67.0		272	33.8	29	17,537	-62.4		275	29.3	25	17,582	-61.8		268	35.9	29	17,569	-62.3		275	31.1
60-----	23	19,411	-62.8		272	16.7	24	19,427	-65.5		274	24.9	29	19,313	-62.3		280	23.7	25	19,365	-61.5		271	22.2	29	19,346	-62.3		275	25.1
50-----	23	20,537	-62.1		270	13.8	24	20,542	-63.6		277	19.8	29	20,440	-61.7		284	18.5	25	20,496	-61.0		271	17.9	29	20,476	-60.9		280	17.5
40-----	23	21,920	-61.0		266	10.7	24	21,918	-61.4		279	18.1	27	21,826	-60.3		281	14.4	23	21,882	-60.4		274	15.7	29	21,865	-60.8		286	15.9
30-----	19	23,712	-59.7		268	9.5	19	23,716	-59.3		279	18.8	25	23,624	-59.5		295	12.0	22	23,684	-59.0		279	15.7	27	23,665	-59.1		292	17.1
25-----	13	24,863	-58.4		268	7.0	18	24,867	-57.8		281	19.8	22	24,757	-58.6		292	11.7	20	24,832	-58.2		285	16.7	26	24,811	-57.9		291	18.1
20-----	11	26,283	-56.8		278	8.4	15	26,271	-56.7		278	24.3	18	26,182	-56.9		295	10.7	14	26,261	-56.2		279	18.7	24	26,222	-56.8		289	18.5
15-----	5	28,146	-52.7				12	28,094	-54.4				9	27,988	-55.7				13	28,090	-53.8				17	28,028	-54.9		293	22.5
10-----																			9	30,669	-51.2									

See reference note at end of table

RAWINSONDE DATA

Average monthly values

NOVEMBER 1960

PORTLAND, ME.
(1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	20	1.7	87	279	3.5
1,000	30	132	3.6	69	262	4.9
950	30	550	3.4	64	256	9.3
900	30	987	1.4	63	256	11.7
850	30	1,445	- .4	59	262	16.7
800	30	1,929	- 1.7	51	268	21.0
750	30	2,442	- 3.7	50	267	25.6
700	30	2,985	- 6.1	49	266	29.5
650	30	3,561	- 8.9	45	266	34.0
600	30	4,179	-12.3	43	265	36.9
550	30	4,835	-16.5	41	264	41.2
500	30	5,550	-21.2	41	266	45.5
450	30	6,315	-26.6	43	264	49.2
400	30	7,162	-32.3	44	263	55.2
350	30	8,092	-38.5		265	58.1
300	30	9,137	-45.3		266	64.5
250	30	10,335	-51.9		270	67.0
200	30	11,766	-56.1		271	69.0
175	30	12,614	-56.6		268	68.6
150	30	13,590	-57.4		270	57.3
125	29	14,736	-58.3		267	50.9
100	29	16,136	-59.8		269	37.9
80	29	17,528	-60.1		268	31.1
60	28	19,319	-61.0		270	22.2
50	28	20,451	-61.2		276	19.0
40	26	21,840	-60.9		278	18.5
30	22	23,638	-60.1		285	16.1
25	22	24,777	-59.1		284	17.7
20	22	26,181	-57.8		279	17.5
15	16	27,999	-55.7		295	20.0
10	5	30,565	-55.6			
7						

POINT ARGUELLO, CALIF.
(1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	113	8.6	89	92	2.3
1,000	30	152	9.5	83	67	3.1
950	30	585	11.8	59	24	4.3
900	30	1,032	10.8	15	27	2.7
850	30	1,506	8.9	44	342	2.7
800	30	2,006	6.6	39	285	3.9
750	30	2,534	3.9	35	270	6.0
700	30	3,090	.8	35	265	9.9
650	30	3,679	- 2.7	36	263	14.0
600	30	4,311	- 6.7	34	264	15.3
550	30	4,980	-10.9	31	265	19.0
500	30	5,711	-16.1		262	22.0
450	30	6,490	-21.8		261	24.5
400	30	7,351	-28.4		255	27.2
350	30	8,294	-35.7		256	30.5
300	30	9,350	-43.2		263	34.4
250	30	10,557	-50.9		260	43.5
200	30	11,988	-56.9		262	43.7
175	30	12,830	-59.0		258	46.4
150	30	13,791	-61.4		256	44.3
125	30	14,916	-63.4		256	41.2
100	29	16,279	-65.4		255	36.9
80	27	17,642	-64.7		258	28.8
60	23	19,400	-63.7		266	20.6
50	22	20,517	-63.2		268	17.5
40	21	21,894	-62.1		268	16.7
30	21	23,679	-60.0		271	17.3
25	21	24,822	-58.0		269	17.3
20	21	26,230	-56.7		275	21.8
15	20	28,062	-53.9		271	24.5
10	18	30,684	-49.8		269	35.9
7	7	33,099	-44.4			

RAPID CITY, S. DAK.
(904 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	966	- 0.3	62	323	4.3
1,000	30	149				
950	30	561				
900	30	997			335	5.8
850	30	1,460	2.1	45	300	15.5
800	30	1,948	.3	45	298	17.9
750	30	2,459	- 2.4	41	304	20.6
700	30	3,008	- 5.6	43	297	22.2
650	30	3,581	- 9.2	45	292	24.5
600	30	4,202	-12.7	41	283	27.8
550	30	4,854	-17.1	41	278	30.7
500	30	5,569	-21.9	43	281	36.7
450	30	6,330	-27.2	42	280	41.8
400	30	7,177	-33.3	43	282	45.5
350	30	8,102	-39.7		281	51.1
300	30	9,141	-46.5		282	57.3
250	30	10,333	-52.9		283	63.0
200	30	11,757	-56.9		275	57.5
175	30	12,600	-58.3		271	54.0
150	30	13,568	-58.8		272	51.7
125	30	14,711	-59.7		272	45.3
100	30	16,103	-60.4		273	36.5
80	29	17,493	-60.7		273	26.4
60	29	19,281	-61.1		275	17.3
50	29	20,415	-60.5		283	14.6
40	25	21,800	-60.3		300	9.7
30	24	23,602	-59.2		331	5.1
25	22	24,740	-59.1		355	4.1
20	20	26,142	-58.7		1	8.2
15	11	27,943	-58.1			
10						
7						

ST. CLOUD, MINN.
(976 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	316	- 2.0	81	291	3.1
1,000	30	120				
950	30	535	- .2	71	301	7.2
900	30	963	- .1	62	306	12.4
850	30	1,420	- 1.4	54	304	14.0
800	30	1,902	- 2.9	48	293	17.9
750	30	2,412	- 4.8	41	294	18.8
700	30	2,951	- 7.8	39	295	21.6
650	30	3,520	-10.9	40	292	25.1
600	30	4,135	-14.6	41	286	28.0
550	30	4,787	-18.5	38	284	31.7
500	30	5,495	-23.3		280	32.8
450	30	6,256	-28.6		279	35.9
400	30	7,092	-34.9	41	280	41.8
350	30	8,011	-41.7		279	46.0
300	30	9,042	-48.1		276	51.3
250	30	10,229	-53.1		278	53.2
200	30	11,659	-55.1		277	56.2
175	30	12,511	-55.5		277	52.8
150	30	13,492	-56.1		279	48.6
125	30	14,648	-57.5		279	44.7
100	29	16,054	-58.1		280	38.7
80	29	17,455	-58.8		280	28.6
60	28	19,258	-59.9		284	19.2
50	28	20,394	-60.5		289	17.3
40	27	21,787	-59.9		299	15.7
30	26	23,586	-59.2		317	10.5
25	24	24,732	-58.8		327	7.6
20	22	26,138	-57.8		339	8.0
15	15	27,962	-56.7		339	9.1
10						
7						

SALEM, OREG.
(1010 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	61	6.7	84	185	6.4
1,000	30	141	6.8	80	183	7.4
950	30	561	6.2	72	197	14.2
900	30	1,005	4.2	68	211	15.9
850	30	1,468	1.9	64	222	16.5
800	30	1,955	- .7	60	232	19.0
750	30	2,467	- 3.2	57	242	19.8
700	30	3,011	- 6.3	57	254	19.8
650	30	3,584	- 9.4	52	255	22.5
600	30	4,202	-12.9	49	254	24.3
550	30	4,859	-17.0	48	260	26.2
500	30	5,570	-21.5	50	262	29.3
450	30	6,333	-27.1	50	262	32.6
400	30	7,176	-33.4	49	264	35.2
350	30	8,101	-40.1		266	35.8
300	30	9,137	-47.0		269	38.7
250	29	10,327	-53.2		272	40.0
200	29	11,748	-57.2		274	36.1
175	29	12,593	-57.0		273	35.4
150	29	13,567	-57.7		277	32.6
125	29	14,716	-58.4		270	29.5
100	29	16,115	-59.0		271	29.9
80	29	17,517	-58.3		276	20.6
60	29	19,322	-59.4		274	11.7
50	29	20,465	-59.0		281	9.3
40	29	21,864	-59.2		309	4.9
30	28	23,671	-58.2		5	3.1
25	23	24,829	-57.1		34	5.4
20	20	26,250	-56.1		31	5.8
15	14	28,097	-54.7		40	13.6
10						
7						

SALT LAKE CITY, UTAH
(871 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,288	2.3	77	181	4.1
1,000	30	185				
950	30	602				
900	30	1,045				
850	30	1,513	4.2	57	188	6.0
800	30	2,006	2.4	54	209	9.7
750	30	2,523	- .3	54	233	10.1
700	30	3,075	- 3.7	55	251	13.8
650	30	3,654	- 7.1	51	260	18.8
600	30	4,279	-10.6	51	264	22.0
550	30	4,939	-14.5	51	263	28.6
500	30	5,661	-19.3	50	263	31.1
450	30	6,430	-24.6	42	265	35.8
400	30	7,287	-30.5		263	40.8
350	30	8,223	-37.4		261	41.8
300	30	9,271	-45.0		263	46.6
250	30	10,469	-52.6		271	47.0
200	30	11,892	-57.6		266	52.3
175	30	12,733	-58.5		264	50.1
150	30	13,702	-59.1		268	42.7
125	29	14,840	-61.1		265	42.6
100	29	16,223	-62.0		266	35.4
80	29	17,601	-62.3		268	28.8
60	29	19,379	-61.4		268	15.3
50	29	20,510	-61.1		262	11.5
40	28	21,898	-60.6		278	9.1
30	25	23,693	-59.4		289	5.1
25	25	24,837	-58.1		299	5.2
20	24	26,245	-56.9		297	3.3
15	19	28,087	-54.6		359	2.5
10						

SAN ANTONIO, TEX.
(992 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	243	13.9	83	10	3.1
1,000	30	170				
950	30	605	14.3	72	90	4.7
900	30	1,061	14.0	67	164	6.4
850	30	1,543	12.4	64	204	9.9
800	30	2,050	10.4	54	227	11.5
750	30	2,583	8.5	42	255	10.9
700	30	3,154	5.5	36	273	13.4
650	30	3,752	2.1	34	267	15.7
600	30	4,399	- 1.7		268	24.5
550	30	5,077	- 6.0		266	20.8
500	30	5,827	-10.7		263	23.7
450	30	6,626	-16.0		262	25.8
400	30	7,509	-21.8		265	33.4
350	30	8,477	-29.2		270	36.5
300	30	9,560	-37.8		269	40.0
250	30	10,792	-47.3		275	48.4
200	30	12,236	-57.4		280	56.0
175	30	13,071	-61.7			
150	30	14,017	-65.5			
125	29	15,121	-68.4			
100	29	16,450	-70.8			
80	29	17,768	-70.8			
60	28	19,487	-66.9			
50	28	20,595	-64.2			
40	27	21,970	-61.2			
30	26	23,770	-57.4			
25	26	24,927	-55.5			
20	24	26,354	-53.7			
15	16	28,210	-51.3			
10						

SAN DIEGO, CALIF.
(1002 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	124	10.1	88	35	1.4
1,000	30	144	11.0	81	32	1.4
950	30	574	13.0	58	83	.6
900	30	1,030	11.8	47	246	1.6
850	30	1,506	9.8	39	242	2.9
800	30	2,008	7.8	32	241	5.4
750	30	2,528	5.5		247	7.6
700	30	3,099	2.5		251	10.5
650	30	3,686	- 1.0		253	14.4
600	30	4,330	- 4.7		250	17.9
550	30	4,998	- 8.9		252	19.4
500	30	5,742	-14.0		257	22.3
450	30	6,522	-19.9		256	26.6
400	30	7,399	-26.3		254	32.8
350	30	8,351	-33.5		247	35.6
300	30	9,416	-41.4		249	39.8
250	30	10,632	-49.7		256	46.8
200	30	12,066	-57.5		253	49.0
175	30	12,906	-59.6		254	54.0
150	29	13,863	-62.4		255	47.8
125	29	14,984	-64.7		257	40.6
100	29	16,339	-66.9		258	33.4
80	29	17,683	-66.8		259	28.6
60	28	19,434	-64.2		263	17.7
50	28	20,552	-63.2		268	18.5
40	28	21,928	-61.5		270	19.8
30	28	23,720	-59.2		272	25.5
25	27	24,868	-57.4		268	20.6
20	25	26,289	-55.5		273	29.7
15	18	28,131	-52.9		272	33.0
10						

SAN JUAN, P. R.
(1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	24.1	87	167	4.3
1,000	30	127	24.5	81	140	6.8
950	30	579	22.1	78	90	10.9
900	30	1,045	19.2	75	88	11.3
850	30	1,535	16.5	72	91	10.3
800	30	2,050	14.1	63	91	9.1
750	30	2,590	11.3	59	95	7.2
700	30	3,168	8.3	54	98	5.8
650	30	3,775	4.8	52	99	3.9
600	30	4,426	1.0	48	84	1.4
550	30	5,112	- 3.1	45	73	1.4
500	30	5,869	- 7.6	40	10	3.7
450	30	6,676	-12.6	35	9	3.7
400	30	7,572	-18.3	30	330	3.1
350	30	8,555	-25.4		304	7.6
300	30	9,655	-33.7		300	14.4
250	30	10,907	-43.6		296	19.8
200	30	12,369	-55.4		286	19.2
175	30	13,208	-61.6		283	23.3
150	30	14,148	-68.0		278	20.0
125	29	15,227	-72.8		290	14.4
100	28	16,517	-77.4		296	9.7
80	27	17,800	-76.1		348	5.6
60	27	19,502	-65.7		41	4.9
50	27	20,622	-61.6		81	7.6
40	27	22,014	-58.0		83	14.0
30	26	23,849	-53.0		77	17.7
25	25	25,030	-51.3		79	14.4
20	24	26,485	-48.9		91	9.7
15	18	28,393	-44.4		206	9.9
10	7	31,142	-40.9			

SANTA MONICA, CALIF.
(1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	38	11.9	77	29	5.2
1,000	30	147	13.7	62	36	4.3
950	30	579	13.1	51	82	2.5
900	30	1,033	11.3	45	132	1.9
850	30	1,509	9.1	40	209	3.3
800	30	2,010	6.9	35	235	5.2
750	30	2,534	4.3	30	250	6.4
700	30	3,096	1.4	28	258	9.3
650	30	3,686	- 2.2	29	256	11.7
600	30	4,322	- 5.9		251	16.5
550	30	4,993	-10.2		250	18.3
500	30	5,726	-15.2		252	23.1
450	30	6,509	-21.2		251	26.8
400	30	7,374	-27.7		254	29.0
350	30	8,320	-35.0		253	33.0
300	30	9,378	-42.5		253	40.0
250	30	10,590	-50.1		256	45.9
200	30	12,024	-57.1		254	47.4
175	30	12,865	-59.2		254	45.7
150	30	13,825	-61.8		254	43.1
125	30	14,948	-64.0		256	41.0
100	30	16,308	-66.1		255	35.6
80	30	17,658	-66.3		258	29.1
60	30	19,411	-63.8		264	18.8
50	30	20,530	-63.2		259	18.1
40	29	21,905	-61.8		269	19.6
30	27	23,691	-60.0		275	18.7
25	26	24,828	-58.7		270	20.8
20	25	26,233	-56.6		269	24.9
15	20	28,058	-54.7		272	29.9
10	12	30,672	-50.4			

SAULT STE. MARIE, MICH.
(985 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	221	1.0	79	259	2.7
1,000	30	98				
950	30	508	.5	76	269	8.4
900	30	944	- 1.2	72	273	15.0
850	30	1,398	- 3.2	66	276	18.7
800	30	1,876	- 5.5	61	277	22.3
750	30	2,377	- 7.5	59	275	24.7
700	30	2,916	-10.1	56	272	29.3
650	30	3,480	-12.9	55	272	31.5
600	30	4,092	-16.2	55	273	33.2
550	30	4,737	-20.1	49	274	35.8
500	30	5,444	-24.6	46	275	39.1
450	30	6,198	-29.6	43	275	43.1
400	30	7,036	-35.0	43	273	48.6
350	30	7,956	-41.3		274	53.4
300	30	8,987	-48.0		273	57.3
250	30	10,176	-52.6		273	63.1
200	29	11,613	-54.6		276	62.0
175	29	12,467	-54.9		271	60.6
150	29	13,453	-55.2		272	56.9
125	29	14,616	-55.7		275	48.4
100	28	16,035	-56.4		277	40.0
80	27	17,446	-58.5		277	32.3
60	27	19,250	-59.4		281	21.2
50	26	20,392	-59.8		289	16.3
40	25	21,786	-59.9		296	15.2
30	24	23,588	-59.1		313	13.8
25	22	24,740	-57.9		318	11.9
20	20	26,152	-57.0		344	9.5
15	6	27,982	-54.0			
10						

SEATTLE, WASH.
(1001 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	125	5.6	82	143	4.7
1,000	30	131			126	4.1
950	30	550	5.5	72	200	11.9
900	30	992	2.9	71	220	13.6
850	30	1,452	.3	71	228	14.6
800	30	1,936	- 2.4	67	229	15.3
750	30	2,443	- 5.1	62	238	15.7
700	30	2,985	- 8.2	61	247	17.3
650	30	3,554	-11.6	57	249	19.8
600	30	4,166	-15.1	51	254	22.0
550	30	4,814	-19.0	51	260	25.3
500	30	5,523	-23.7	49	258	28.0
450	30	6,275	-29.2	48	259	32.1
400	30	7,116	-35.2	44	263	37.7
350	30	8,035	-41.6		262	43.1
300	30	9,065	-48.3		262	46.8
250	29	10,260	-54.1		270	47.4
200	28	11,682	-56.4		270	40.8
175	27	12,529	-56.9		273	36.3
150	27	13,506	-57.2		274	31.1
125	26	14,661	-57.7		279	28.2
100	23	16,092	-57.2		278	22.9
80	23	17,503	-57.4		283	18.1
60	22	19,313	-58.2		290	10.3
50	21	20,466	-57.9		302	7.2
40	20	21,878	-57.5		322	4.1
30	16	23,703	-56.3		37	8.0
25	14	24,864	-55.6		43	9.5
20	14	26,290	-54.4		56	10.9
15	10	28,131	-52.8			
10						

SHEMYA, ALASKA
(1003 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	37	0.7	84	281	10.7
1,000	30	58			308	9.7
950	30	468	- 2.5	78	289	13.6
900	30	894	- 5.6	78	281	16.7
850	30	1,340	- 8.7	77	285	17.5
800	30	1,807	-11.4	71	285	16.9
750	30	2,300	-14.2	59	288	17.7
700	30	2,820	-17.4	52	281	19.2
650	30	3,369	-20.6	44	281	17.7
600	30	3,961	-23.7	40	290	24.3
550	30	4,587	-27.2		290	29.1
500	30	5,273	-31.4		293	32.4
450	30	6,006	-36.2		287	37.1
400	30	6,820	-41.7		286	40.6
350	30	7,715	-46.9		284	44.7
300	28	8,730	-51.4		283	46.8
250	27	9,917	-52.3		278	47.8
200	27	11,364	-51.6		273	45.3
175	27	12,232	-50.8		274	40.8
150	27	13,237	-50.5		272	38.5
125	27	14,426	-50.6		274	36.7
100	27	15,879	-50.8		272	30.5
80	26	17,330	-51.4		266	27.4
60	26	19,196	-51.9		267	21.4
50	25	20,379	-51.6		272	15.0
40	25	21,825	-52.0		260	9.9
30	24	23,689	-52.1		259	4.7
25	23	24,872	-51.9		56	1.4
20	20	26,309	-51.8		88	5.6
15	10	28,264	-48.4			
10						

SHREVEPORT, LA.
(1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	76	10.1	81	122	1.4
1,000	30	182	11.1	71	130	3.1
950	30	610	11.6	60	192	5.6
900	30	1,064	10.4	54	244	7.0
850	30	1,539	9.1	49	265	9.3
800	30	2,041	7.7	43	267	13.2
750	30	2,570	5.4	41	266	16.1
700	30	3,132	3.2		272	17.1
650	30	3,725	- .1		271	19.0
600	30	4,366	- 3.8		269	22.2
550	30	5,038	- 8.2		271	25.6
500	30	5,782	-12.9		268	29.1
450	30	6,566	-18.3		267	34.0
400	30	7,448	-24.6		264	39.2
350	30	8,407	-31.4		264	43.5
300	30	9,481	-39.5		265	50.1
250	30	10,704	-48.7		265	59.7
200	30	12,140	-58.0		270	63.7
175	30	12,973	-61.8		270	62.6
150	30	13,923	-64.2		268	56.2
125	30	15,032	-67.0		270	49.4
100	29	16,368	-69.9		271	40.0
80	29	17,695	-69.6		271	30.9
60	29	19,421	-66.3		272	23.7
50	28	20,531	-64.1		274	21.2
40	25	21,906	-61.0		274	19.6
30	24	23,707	-58.2		277	22.9
25	24	24,858	-56.6		273	27.4
20	23	26,272	-54.7		275	31.1
15	18	28,107	-52.1		270	36.9
10	8	30,751	-47.8			

SPOKANE, WASH.
(932 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	722	0.2	85	191	4.1
1,000	30	151				
950	30	564				
900	30	1,001	1.8	73	206	9.3
850	30	1,461	.2	65	230	13.6
800	30	1,944	- 2.3	61	242	15.9
750	30	2,455	- 4.4	50	253	16.9
700	30	2,996	- 7.6	46	257	18.8
650	30	3,564	-11.1	44	260	21.4
600	30	4,179	-14.8	44	263	26.2
550	30	4,827	-19.0	47	264	29.7
500	30	5,537	-23.5	46	263	34.4
450	30	6,290	-28.7	47	264	38.3
400	30	7,133	-34.7	44	265	41.4
350	30	8,054	-41.0		272	42.0
300	30	9,086	-48.1		274	44.3
250	30	10,271	-54.0		278	41.6
200	30	11,692	-56.5		280	42.2
175	30	12,540	-56.7		279	38.5
150	30	13,518	-56.4		274	36.3
125	30	14,676	-56.3		275	30.7
100	30	16,092	-57.2		276	26.2
80	30	17,500	-57.5		272	20.0
60	29	19,323	-57.7		284	11.5
50	29	20,473	-57.6		282	8.5
40	28	21,882	-57.3		322	3.5
30	26	23,706	-56.4		34	5.4
25	22	24,877	-55.6		49	10.3
20	20	26,296	-55.1		51	14.0
15	10	28,191	-52.6			
10						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	TAMPA, FLA. (1019 MB.)						TATOOSH IS., WASH. (1010 MB.)					
					Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	8	16.5	88	41	6.6	29	31	8.0	81	109	8.7
1,000--	30	170	19.1	76	54	8.0	29	111	7.8	76	122	8.9
950----	30	609	17.4	71	78	5.6	29	529	5.4	71	174	8.5
900----	30	1,072	15.0	64	98	2.9	29	973	2.7	72	198	10.7
850----	30	1,555	12.7	52	30	.8	29	1,433	- .3	71	208	11.5
800----	30	2,062	11.1	42	307	1.7	29	1,916	- 2.7	64	226	13.2
750----	30	2,598	9.0	35	277	4.1	29	2,421	- 5.4	61	233	15.3
700----	30	3,168	6.5		280	6.6	29	2,964	- 8.5	60	241	14.8
650----	30	3,773	3.6		277	9.7	29	3,529	-11.7	56	248	17.3
600----	30	4,419	- .4		273	12.6	28	4,144	-15.4	52	257	21.0
550----	30	5,104	- 4.5		274	14.6	28	4,786	-19.7	50	257	25.8
500----	30	5,855	- 8.9		274	17.5	28	5,497	-24.7	50	259	27.8
450----	30	6,660	-14.4		272	20.8	28	6,240	-30.5	49	252	29.5
400----	30	7,547	-20.4		271	24.5	28	7,083	-36.7	45	249	35.6
350----	30	8,523	-27.4		272	29.9	28	7,995	-43.2		252	38.9
300----	30	9,615	-35.9		272	33.6	28	9,019	-49.4		251	45.9
250----	30	10,857	-45.8		273	37.9	28	10,200	-54.1		260	44.7
200----	29	12,313	-56.3		271	39.6	28	11,620	-56.8		260	42.7
175----	29	13,151	-61.4		269	43.3	28	12,466	-57.0		265	39.6
150----	29	14,099	-65.5		266	37.9	28	13,445	-56.4		267	33.0
125----	29	15,199	-69.2		270	36.3	27	14,607	-56.5		266	30.3
100----	29	16,522	-72.1		275	30.7	27	16,022	-57.3		269	24.3
80-----	29	17,836	-71.3		284	20.2	27	17,433	-57.4		271	20.6
60-----	29	19,561	-65.5		281	10.9	27	19,251	-57.6		288	9.9
50-----	29	20,679	-61.9		270	11.1	27	20,402	-57.7		303	6.0
40-----	27	22,075	-57.8		273	13.8	27	21,810	-57.5		346	3.3
30-----	23	23,901	-54.6		271	19.4	23	23,641	-57.3		39	4.3
25-----	22	25,075	-52.9		269	22.2	21	24,794	-56.6		59	8.4
20-----	19	26,517	-50.6		265	25.3	17	26,190	-56.3		88	12.0
15-----	14	28,422	-46.7		262	29.3	9	28,048	-54.5			
10-----												

Standard pressure surface (mb.)	TOPEKA, KANS. (986 MB.)						TUCSON, ARIZ. (926 MB.)					
					Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	269	2.6	81	250	4.7	30	781	8.9	53	144	6.0
1,000--	30	155					30	149				
950----	30	574	5.4	61	253	10.3	30	580				
900----	30	1,015	5.2	51	266	15.3	30	1,032	14.6	39	135	4.9
850----	30	1,481	3.9	46	276	17.9	30	1,514	13.0	37	144	3.5
800----	30	1,973	2.7	38	278	19.0	30	2,021	10.1	37	196	6.4
750----	30	2,490	.6	35	276	21.6	30	2,551	7.2	31	209	9.1
700----	30	3,045	- 1.8	32	276	26.6	30	3,120	4.2		229	11.1
650----	30	3,628	- 4.3		274	32.1	30	3,716	.7		238	13.2
600----	30	4,259	- 8.1		273	35.6	30	4,358	- 3.6		245	17.3
550----	30	4,925	-12.4		266	36.3	30	5,031	- 7.9		254	18.5
500----	30	5,651	-17.5		275	41.4	30	5,775	-13.1		253	22.0
450----	30	6,425	-23.1		277	45.7	30	6,562	-18.6		254	27.6
400----	30	7,285	-29.5		276	50.9	30	7,440	-24.9		253	31.1
350----	30	8,226	-35.8		275	58.5	30	8,397	-31.9		259	33.2
300----	30	9,281	-43.5		278	59.1	30	9,468	-39.8		261	39.8
250----	30	10,487	-51.2		277	62.2	30	10,690	-48.5		261	48.6
200----	29	11,925	-56.8		276	69.9	30	12,128	-56.9		260	54.4
175----	29	12,768	-58.7		275	66.8	30	12,969	-59.4		258	55.4
150----	29	13,733	-60.1		272	59.7	30	13,926	-62.8		260	51.1
125----	29	14,864	-62.7		275	54.2	29	15,035	-65.7		258	47.6
100----	29	16,236	-64.1		272	43.5	28	16,384	-67.7		261	37.9
80-----	29	17,597	-65.1		275	34.0	28	17,724	-67.7		262	29.5
60-----	29	19,360	-63.2		279	25.8	28	19,466	-64.8		267	19.0
50-----	29	20,486	-62.0		279	16.1	28	20,581	-63.7		267	19.4
40-----	28	21,871	-61.3		277	12.2	28	21,956	-61.4		273	21.4
30-----	26	23,665	-59.9		289	10.9	26	23,754	-58.7		273	24.1
25-----	25	24,810	-58.5		301	9.3	24	24,907	-56.8		270	26.8
20-----	20	26,227	-56.6		290	10.5	19	26,315	-55.1		267	32.3
15-----	10	28,084	-53.6				10	28,187	-52.4			
10-----	5	30,724	-48.8									

Standard pressure surface (mb.)	WASHINGTON, D. C. (1010 MB.)					
					Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	84	2.1	81	283	2.1
1,000--	30	162	6.3	67	301	4.1
950----	30	586	7.5	55	277	11.3
900----	30	1,028	5.4	55	279	14.8
850----	30	1,494	3.4	51	280	18.5
800----	30	1,984	1.2	51	270	21.2
750----	30	2,503	- .6	45	271	25.6
700----	30	3,052	- 2.3	35	269	30.7
650----	30	3,635	- 5.2	34	267	35.4
600----	30	4,262	- 8.9		264	35.4
550----	30	4,926	-13.1		267	36.1
500----	30	5,651	-18.0		266	42.4
450----	30	6,426	-23.3		265	46.8
400----	30	7,285	-28.9		264	55.2
350----	30	8,228	-35.3		266	60.4
300----	30	9,285	-42.5		268	59.5
250----	30	10,497	-50.1		269	66.6
200----	30	11,934	-56.2		270	65.7
175----	29	12,777	-58.6		272	61.6
150----	29	13,743	-59.9		274	58.1
125----	28	14,872	-62.3		275	52.3
100----	28	16,247	-63.7		273	42.7
80-----	27	17,616	-63.7		275	32.4
60-----	27	19,385	-62.1		275	22.7
50-----	27	20,513	-61.7		275	21.8
40-----	27	21,897	-60.9		282	19.4
30-----	26	23,691	-59.0		283	19.0
25-----	26	24,837	-57.9		278	18.3
20-----	24	26,247	-56.8		277	23.7
15-----	22	28,080	-54.0		278	28.8
10-----	9	30,771	-49.1			

Standard pressure surface (mb.)	WINNEMUCCA, NEV. (871 MB.)						YAKUTAT, ALASKA (1001 MB.)					
					Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	1,310	0.5	78	182	1.7	30	12	0.5	87	88	5.2
1,000--	30	184					30	20			109	4.9
950----	30	600					30	434	1.2	77	121	12.2
900----	30	1,044					30	868	- 1.4	76	140	12.8
850----	30	1,507	3.9	59	184	3.1	30	1,322	- 4.0	72	154	14.4
800----	30	1,998	1.8	54	224	7.8	30	1,798	- 7.0	72	162	14.6
750----	30	2,511	- .9	52	241	11.3	30	2,296	-10.3	72	174	13.6
700----	30	3,065	- 3.5	46	241	15.9	30	2,828	-13.4	70	190	13.4
650----	30	3,639	- 6.6	46	259	19.4	30	3,383	-17.0	65	199	13.6
600----	30	4,269	-10.1	46	261	24.1	30	3,986	-20.7	58	207	13.0
550----	30	4,925	-14.5	44	263	28.8	30	4,620	-24.9	50	218	15.0
500----	30	5,651	-19.1	44	264	29.7	30	5,313	-29.4	47	231	15.9
450----	30	6,418	-24.7	42	267	30.1	30	6,048	-34.5	45	246	19.6
400----	30	7,273	-31.2	43	262	33.0	30	6,873	-40.3		251	23.5
350----	30	8,207	-38.1	40	261	31.9	30	7,773	-46.3		254	29.7
300----	30	9,251	-45.8		263	39.4	30	8,784	-51.7		257	33.8
250----	30	10,445	-53.3		274	34.2	30	9,958	-54.8		259	31.5
200----	30	11,862	-58.4		275	33.8	29	11,382	-52.8		261	25.8
175----	30	12,701	-58.9		269	37.7	29	12,247	-51.5		262	24.5
150----	30	13,667	-59.5		268	34.2	29	13,250	-50.8		258	22.3
125----	30	14,805	-60.8		272	29.1	29	14,437	-51.0		256	21.0
100----	30	16,190	-61.8		270	24.5	29	15,890	-50.5		272	16.3
80-----	30	17,568	-62.2		279	19.6	29	17,344	-50.3		278	12.6
60-----	30	19,346	-62.1		278	12.2	29	19,218	-51.3		286	9.7
50-----	30	20,476	-61.1		276	9.9	28	20,406	-51.6		300	9.3
40-----	28	21,867	-60.2		271	9.1	28	21,853	-51.8		326	5.8
30-----	28	23,665	-59.3		303	5.1	27	23,724	-51.7		355	6.8
25-----	27	24,810	-58.3		312	5.4	25	24,913	-51.3		15	7.2
20-----	22	26,230	-56.9		330	2.9	24	26,366	-52.1		34	8.0
15-----	13	28,042	-56.0				18	28,266	-51.6		29	11.1

Note: All observations scheduled at 1200, G. C. T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant wind speed is biased toward a lower value as the number of observations on which the resultant is based lessens. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. **NOVEMBER 1960**

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	ALBUQUERQUE, N. MEX.								
	Air mass								
	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Nov.									
1	0.93	1.03	1.17	1.35	1.41	1.33	1.21	1.10	1.01
2	1.01	1.12	1.24	(1.29)	----	1.35	(1.16)	----	----
3	.90	(1.00)	(1.16)	----	----	(1.29)	----	----	.90
8	---	----	1.16	1.36	1.43	(1.34)	(1.17)	(1.05)	.95
9	1.02	1.12	1.23	1.35	1.35	1.30	1.20	1.04	.98
10	1.01	1.09	1.23	1.37	1.41	1.37	1.22	1.09	.93
11	(.96)	(1.13)	(1.20)	(1.27)	----	----	----	----	----
12	.99	1.10	1.23	1.33	1.43	1.35	1.15	1.01	.92
15	1.03	1.14	1.15	1.36	1.40	1.38	1.25	1.12	1.03
16	1.09	1.20	1.28	1.42	(1.41)	----	----	----	----
17	1.08	1.13	1.27	(1.38)	(1.38)	(1.31)	(1.16)	1.14	1.05
18	1.10	1.21	1.27	1.43	1.44	1.42	1.28	1.19	1.08
19	1.01	1.12	1.25	(1.39)	(1.39)	1.33	1.13	.97	.85
20	.99	1.08	1.20	1.35	1.39	1.30	1.06	.95	.82
21	.98	1.10	1.25	1.39	1.42	1.40	1.19	1.09	.98
22	1.04	1.15	1.27	1.41	1.45	1.37	1.25	1.14	1.03
23	.93	1.07	1.21	1.34	1.40	1.37	1.23	1.12	.99
24	1.01	1.12	1.23	1.39	1.42	1.40	1.23	1.14	1.04
25	----	(.73)	(.62)	(1.13)	----	----	----	----	----
26	.61	1.11	1.24	1.37	(1.35)	1.39	----	----	1.03
27	----	----	----	(1.17)	D(1.28)	----	----	----	----
28	----	----	----	1.40	1.41	1.39	1.27	1.15	1.05
29	1.03	1.07	1.13	1.39	1.41	1.36	1.18	1.08	1.01
30	----	----	----	----	(1.37)	1.36	1.21	1.09	(.91)
	MADISON, WIS.								
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Nov.									
3	S 0.99	S 1.09	1.23	1.38	1.39	1.37	----	----	----
7	S 1.09	S 1.15	S 1.29	----	----	----	----	----	----
10	1.07	1.18	1.29	----	----	----	1.06	----	----
11	----	----	----	1.29	1.29	1.29	----	----	----
16	----	1.13	1.29	----	----	----	----	----	----
23	----	----	----	----	S 1.45	----	----	----	----
Averages	1.05	1.14	1.28	1.34	1.38	1.33	1.06	----	----

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	TUCSON, ARIZ.								
	Air mass								
	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Nov.									
1	0.95	1.04	----	----	----	----	----	----	----
2	.98	1.08	----	----	----	----	----	----	----
7	----	----	----	----	----	----	1.23	----	----
9	----	----	----	----	1.45	----	----	----	0.94
12	.98	1.09	----	----	----	----	----	1.09	----
16	1.01	1.10	1.18	----	1.42	----	1.13	----	----
21	.95	----	----	----	1.36	----	----	----	----
24	.99	1.08	----	----	1.44	----	----	----	1.05
26	.99	1.08	----	----	----	----	----	----	----
28	1.06	1.13	1.25	----	----	----	----	1.10	.98
Averages	0.99	1.09	1.21	----	1.42	----	1.18	1.10	0.99
	OMAHA, NEBR.								
	Air mass								
	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Nov.									
1	----	----	----	1.05	----	1.25	0.90	0.76	†
5	S 0.71	S 0.83	S 0.96	S 1.12	S 1.14	S 1.09	S .91	S .74	S 0.54
10	----	----	S .99	S 1.14	S 1.17	1.12	.91	S .77	----
11	.69	S .82	S .95	----	----	1.08	----	----	----
13	----	----	M .82	I .84	----	----	----	----	----
15	----	----	----	----	----	----	----	M .66	M .54
16	S .80	.90	S 1.01	----	----	----	----	----	----
18	S .81	S .92	S 1.07	----	----	----	----	----	----
19	S .56	S .69	S .87	----	S 1.11	----	S .93	S .70	S .61
20	S .82	S .95	S 1.08	----	S 1.20	----	S .99	S .85	----
21	S .79	S .90	S 1.01	----	M 1.14	----	S .95	S .79	S .65
22	----	----	----	----	----	----	S 1.02	S .84	S .82
25	----	----	M .86	M 1.02	M 1.10	----	M .92	S .79	S .71
29	S .85	S .95	S 1.09	----	S 1.21	----	S 1.06	†	†
30	S .85	S .94	S 1.14	----	S 1.26	----	----	----	----
Averages	0.76	0.88	0.99	1.03	1.17	1.14	0.95	0.76	0.65
	GUAM, M. I.								
	Air mass								
	4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
	No observations during November								

* Values corresponding to true solar noon.
† Wind Mast shadow
D Dust
( ) Data in parenthesis estimated due to cloudiness
S Slight haze - indeterminable
M Moderate haze - indeterminable
I Intense haze - indeterminable

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

	Albuquerque, N.Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill Obs.,Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area	Cape Hatteras N.C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.	Davis, Calif.	Dodge City, Kans.	East Lansing, Mich.	El Paso, Tex.	Ely, Nev	Fairbanks, Alaska	Flaming Gorge, Utah	Fort Worth Tex	Fresno, Calif.	Gainesville, Fla.	Glasgow Mont.	Grand Junction Colo.	Great Falls Mont	Greensboro, N. C	Griffin Ga	Indianapolis Ind	Inyokern Calif.	Ithaca N Y	Lake Charles La	Lander Wyo.
1960																																								
Nov. 5-----	267	---	21	419	263	310	7	39	218	246	296	248	336	625	431	---	390	45	349	268	57	397	125	354	123	62	308	331	92	402	243	309	235	326	439	215	83	79	375	379
Nov. 6-----	225	---	165	425	215	390	2	20	269	266	---	219	335	640	443	128	---	88	180	210	191	383	198	201	92	128	250	423	117	174	248	214	231	376	476	120	385	121	418	315
Nov. 7-----	240	---	227	431	133	391	28	49	122	167	---	153	370	671	338	156	408	169	355	109	292	258	297	313	112	61	192	247	292	583	87	218	92	385	179	294	385	113	106	170
Nov. 8-----	388	---	20	256	88	381	20	2	140	296	115	281	339	---	424	180	398	224	59	217	328	367	57	391	200	131	63	184	292	405	---	131	142	388	168	117	136	254	265	150
Nov. 9-----	381	230	32	383	172	230	19	2	266	188	258	174	383	672	342	43	234	14	119	162	246	395	20	422	351	65	365	216	280	219	245	316	189	142	331	13	134	7	67	340
Nov. 10-----	394	301	29	320	14	221	8	8	107	38	186	44	58	661	146	16	276	55	347	33	299	377	171	413	311	104	346	399	270	280	65	277	79	188	229	229	414	1	134	272
Nov. 11-----	338	275	63	164	114	257	2	7	69	275	88	261	100	656	232	158	112	209	325	150	46	363	254	275	287	36	326	397	191	210	120	336	166	217	285	313	422	81	398	251
Average-------	319	---	79	343	143	311	12	18	170	211	188	197	274	654	337	113	303	115	248	164	208	363	160	338	211	84	264	314	219	368	168	257	162	289	387	186	366	98	295	265
Nov. 12-----	381	---	27	87	125	332	1	27	95	265	168	256	261	647	353	78	352	244	303	93	141	(346)	243	406	198	23	248	112	138	113	85	273	193	350	115	282	277	86	333	302
Nov. 13-----	305	---	40	296	121	272	7	23	95	241	63	216	301	455	384	94	351	209	160	214	155	355	234	399	295	14	153	142	81	284	64	248	178	336	351	156	407	1	--	294
Nov. 14-----	245	---	106	359	166	337	5	31	233	227	73	186	300	665	229	80	349	187	209	168	171	237	131	285	177	22	211	215	256	249	115	237	96	323	119	161	426	170	256	238
Nov. 15-----	390	---	14	364	43	329	2	41	195	107	62	109	336	687	381	9	304	106	75	36	199	222	30	307	310	11	320	176	252	243	182	322	184	279	117	33	412	106	366	296
Nov. 16-----	376	235	56	354	158	194	1	47	232	153	69	152	307	534	291	43	302	191	314	151	299	349	152	385	314	31	281	323	270	247	131	325	95	229	205	273	411	36	---	257
Nov. 17-----	373	176	30	237	18	197	1	60	186	228	171	219	182	601	97	166	128	231	315	38	178	345	219	309	321	12	314	327	225	285	208	319	154	274	209	295	408	175	65	230
Nov. 18-----	382	244	13	163	136	95	---	50	151	250	142	227	117	565	83	180	71	115	240	179	304	299	45	405	139	8	124	385	90	96	47	261	93	147	109	243	393	138	38	244
Average-------	350	---	41	266	109	251	3	40	170	210	107	195	258	593	260	93	265	183	231	125	207	(307)	150	357	250	17	236	240	187	217	119	283	142	277	305	206	378	101	218	266
Nov. 19-----	370	246	65	378	16	351	---	37	223	101	197	122	197	663	361	164	355	61	294	52	296	368	141	380	310	6	295	353	227	307	192	129	135	328	430	130	411	182	331	281
Nov. 20-----	357	249	46	335	24	327	---	96	166	213	177	208	314	629	364	47	349	165	232	46	305	349	198	311	299	46	326	---	262	324	117	309	82	296	409	249	399	67	74	174
Nov. 21-----	363	251	53	333	90	---	---	31	102	202	241	183	180	625	302	114	334	183	294	122	249	335	210	374	302	46	268	58	224	748	203	304	187	314	400	119	403	175	168	234
Nov. 22-----	361	255	3	316	41	---	---	57	128	200	---	197	207	666	351	204	332	185	67	64	147	329	184	383	259	9	280	225	170	374	200	308	169	300	341	79	401	311	77	272
Nov. 23-----	358	239	33	220	47	58	---	92	144	63	61	55	245	652	110	13	114	236	283	23	165	331	229	358	272	38	253	274	210	290	149	296	131	38	81	272	380	88	100	241
Nov. 24-----	355	162	91	272	10	46	---	17	166	186	29	169	108	593	67	208	30	188	236	11	267	301	193	376	255	19	246	335	241	261	111	256	74	66	63	231	378	158	262	168
Nov. 25-----	292	230	5	327	93	145	---	11	155	165	121	148	263	619	327	86	321	117	263	113	94	312	149	(359)	270	28	286	366	265	78	166	238	81	268	114	236	388	190	340	269
Average-------	351	233	42	311	46	186	---	49	155	162	138	154	216	635	269	119	262	162	238	61	218	332	186	(363)	231	27	279	268	228	340	163	263	123	230	262	188	394	167	193	234
Nov. 26-----	334	73	25	325	183	121	---	11	106	220	52	200	348	689	318	64	325	177	210	97	228	322	159	(365)	160	24	337	172	30	463	136	248	63	259	167	205	156	192	331	252
Nov. 27-----	267	49	40	311	138	237	---	15	102	96	224	93	313	666	339	179	255	26	121	155	223	147	14	320	179	4	84	171	240	160	54	149	162	247	335	47	388	75	176	70
Nov. 28-----	353	38	6	264	124	250	---	21	74	18	224	12	310	624	244	185	225	43	247	115	222	209	82	380	290	3	288	363	204	640	211	291	184	195	273	31	366	61	204	289
Nov. 29-----	343	231	29	225	92	226	---	49	---	26	122	18	334	652	201	10	170	18	---	103	95	257	52	373	158	14	260	383	80	338	197	254	161	94	303	72	154	7	383	276
Nov. 30-----	311	248	20	365	23	335	---	16	205	199	182	189	---	651	372	37	351	59	291	42	165	72	157	342	282	3	268	363	249	547	150	259	---	314	458	208	373	110	379	208
Dec. 1-----	208	267	9	360	88	322	---	15	182	180	96	152	296	633	272	61	---	62	295	46	119	283	216	353	276	20	272	349	55	510	136	269	146	330	442	170	334	221	373	278
Dec. 2-----	210	215	1	365	132	318	---	9	135	225	119	217	213	663	137	147	343	168	265	157	155	---	186	263	60	4	236	351	245	510	139	83	78	311	471	258	357	94	373	251
Average-------	289	160	18	316	112	258	---	19	134	138	145	126	302	654	269	97	278	79	238	102	172	215	124	(342)	201	10	249	307	157	453	146	222	133	250	350	141	304	109	317	232

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Laramie, Wyo.	Las Vegas, Nev.	Lemont, Ill	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.	Matanuska, Alaska	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla	Midland, Tex.
Nov. 5	359	35	272	64	188	124	114	210	348	56	577	282	433	84
Nov. 6	293	344	202	177	410	355	148	---	320	32	570	137	453	69
Nov. 7	232	375	311	345	388	---	264	323	285	34	569	93	509	274
Nov. 8	108	370	15	366	62	320	351	29	319	57	573	247	464	170
Nov. 9	342	375	65	52	26	325	345	159	319	53	407	205	316	229
Nov. 10	220	362	296	240	380	303	319	309	340	71	455	72	390	421
Nov. 11	299	360	275	404	419	259	316	283	307	53	352	149	327	341
Average	265	317	205	235	267	281	265	219	320	51	500	169	413	227
Nov. 12	310	342	275	354	350	69	43	243	311	24	451	65	414	376
Nov. 13	304	368	249	334	278	276	333	262	105	---	418	90	395	367
Nov. 14	270	327	192	226	157	326	248	77	182	11	560	167	333	295
Nov. 15	224	360	12	297	155	339	351	40	128	10	459	86	295	328
Nov. 16	281	332	256	226	250	352	360	222	300	18	515	107	335	257
Nov. 17	290	347	245	379	356	350	356	143	287	31	552	75	(318)	---
Nov. 18	240	344	172	358	353	313	311	69	267	31	564	152	358	369
Average	274	346	200	311	271	290	286	151	226	21	503	106	(350)	332
Nov. 19	183	349	209	159	352	339	353	166	251	22	534	134	346	276
Nov. 20	288	343	110	317	92	353	363	205	278	17	525	139	400	95
Nov. 21	240	339	256	329	266	325	330	252	270	35	461	171	393	319
Nov. 22	262	339	92	193	94	318	331	175	240	69	476	75	302	360
Nov. 23	239	323	248	257	313	272	298	260	271	37	486	18	318	303
Nov. 24	149	323	164	186	387	294	311	142	206	68	532	121	381	359
Nov. 25	236	323	205	312	260	237	284	179	252	48	531	43	363	367
Average	228	334	183	250	252	305	324	197	252	42	506	100	358	297
Nov. 26	241	190	173	310	94	48	60	133	191	20	535	54	246	284
Nov. 27	53	327	49	170	267	304	330	24	87	8	498	208	334	345
Nov. 28	265	317	68	120	197	281	281	124	211	4	377	84	294	367
Nov. 29	237	224	90	131	365	176	190	68	263	15	522	216	353	200
Nov. 30	(171)	300	180	201	343	276	295	253	200	9	520	181	297	---
Dec. 1	238	305	230	327	359	300	310	---	254	8	484	19	389	---
Dec. 2	197	282	218	342	347	311	319	209	236	26	461	95	317	327
Average	(200)	278	144	229	282	242	255	135	206	13	485	122	319	305

1960	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Page, Ariz.	Phoenix, Ariz.	Portland, Me.	Pullman, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	Salt Lake City, Utah
Nov. 5	51	234	168	326	50	389	234	170	281	270	296	180	134	331
Nov. 6	330	272	202	---	252	401	151	147	175	237	294	200	229	235
Nov. 7	359	286	258	256	381	266	343	360	261	171	127	241	234	76
Nov. 8	282	304	267	285	343	282	353	368	289	262	208	378	176	48
Nov. 9	16	216	157	307	81	298	377	367	139	229	301	395	148	332
Nov. 10	242	38	40	300	124	413	363	343	38	32	286	356	(145)	307
Nov. 11	350	284	245	293	304	396	367	316	313	243	241	356	160	203
Average	233	233	191	294	219	349	312	296	214	206	250	301	(175)	219
Nov. 12	265	257	240	216	229	374	355	354	239	192	252	90	131	262
Nov. 13	218	253	189	172	176	290	267	279	115	63	245	381	146	243
Nov. 14	249	230	111	69	246	303	317	253	189	94	236	264	117	98
Nov. 15	294	124	124	150	279	228	365	356	26	48	191	382	33	307
Nov. 16	196	144	159	268	30	379	347	353	132	61	236	389	41	273
Nov. 17	319	206	244	144	311	---	356	346	200	81	240	386	47	285
Nov. 18	322	247	165	256	215	362	346	347	223	174	203	363	231	48
Average	266	209	176	182	212	323	336	327	161	102	229	322	107	217
Nov. 19	313	163	165	256	308	353	320	326	131	87	238	373	95	297
Nov. 20	298	243	219	266	259	220	342	336	206	119	191	372	213	285
Nov. 21	294	231	190	262	273	247	334	330	104	89	179	369	173	182
Nov. 22	81	239	185	237	194	157	337	331	163	178	237	366	180	280
Nov. 23	36	102	91	223	41	357	285	323	42	39	128	350	---	235
Nov. 24	161	212	191	186	94	338	289	329	184	31	153	352	---	208
Nov. 25	249	160	96	242	101	322	255	227	130	30	139	349	---	273
Average	205	193	162	239	181	285	309	315	137	82	181	362	165	251
Nov. 26	284	215	164	130	158	167	244	283	208	76	195	79	---	84
Nov. 27	192	86	---	101	215	121	140	328	100	45	44	337	---	49
Nov. 28	95	53	73	78	112	334	328	320	20	212	220	348	---	276
Nov. 29	309	56	68	258	280	343	272	300	10	115	225	183	---	205
Nov. 30	305	220	224	247	305	293	315	304	188	138	105	220	---	255
Dec. 1	305	204	163	258	297	312	236	149	161	56	191	318	---	262
Dec. 2	307	228	202	223	308	298	185	125	386	17	175	262	---	204
Average	257	152	149	185	239	267	246	259	153	94	165	250	---	191

1960	San Antonio, Tex.	Santa Maria, Calif.	S. Ste.Marie, Mich.	Sayville, N. Y.	Seattle-Tacoma, Wash.	Shreveport, La	Spokane, Wash.	State College, Pa.	Tampa, Fla	Tucson, Ariz	Washington, D. C. (Obs & Test Dev Ctr)
Nov. 5	321	100	171	143	237	319	217	55	457	175	20
Nov. 6	343	338	161	255	225	418	198	133	428	193	236
Nov. 7	394	373	188	272	114	359	196	274	492	415	220
Nov. 8	103	385	17	288	124	159	202	317	415	404	340
Nov. 9	281	372	74	166	180	99	181	80	443	424	220
Nov. 10	71	388	161	22	29	360	---	99	422	386	81
Nov. 11	346	336	26	262	185	416	---	304	401	---	322
Average	266	327	114	201	156	304	199	180	437	333	205
Nov. 12	75	198	58	229	193	305	---	276	278	410	308
Nov. 13	118	247	183	213	104	156	---	269	385	319	290
Nov. 14	164	357	94	188	68	162	---	203	372	177	264
Nov. 15	185	343	18	118	32	155	58	160	346	379	208
Nov. 16	165	351	30	146	145	(298)	139	45	355	---	126
Nov. 17	53	338	46	209	24	280	39	274	344	338	300
Nov. 18	83	200	65	193	126	303	223	214	337	---	271
Average	121	291	71	185	99	(237)	115	206	345	325	252
Nov. 19	54	347	136	178	37	333	146	262	300	(375)	247
Nov. 20	35	346	209	196	26	44	26	240	401	---	258
Nov. 21	64	342	149	216	56	106	81	240	375	377	269
Nov. 22	230	344	141	193	42	64	185	171	376	374	181
Nov. 23	188	330	202	81	29	74	19	233	373	327	69
Nov. 24	349	334	143	212	17	158	26	229	369	384	72
Nov. 25	227	305	139	74	93	289	38	161	345	94	158
Average	164	335	160	164	43	152	74	219	363	(322)	179
Nov. 26	232	97	163	190	179	244	90	220	216	370	249
Nov. 27	158	334	57	143	165	254	82	84	381	351	146
Nov. 28	210	245	10	93	125	87	139	88	394	378	152
Nov. 29	381	182	43	51	96	342	110	22	274	359	42
Nov. 30	368	286	102	198	24	334	115	177	365	337	232
Dec. 1	205	126	131	162	76	331	43	111	406	265	212
Dec. 2	264	254	160	210	58	337	49	230	399	171	267
Average	260	218	95	150	103	276	90	133	348	319	186

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

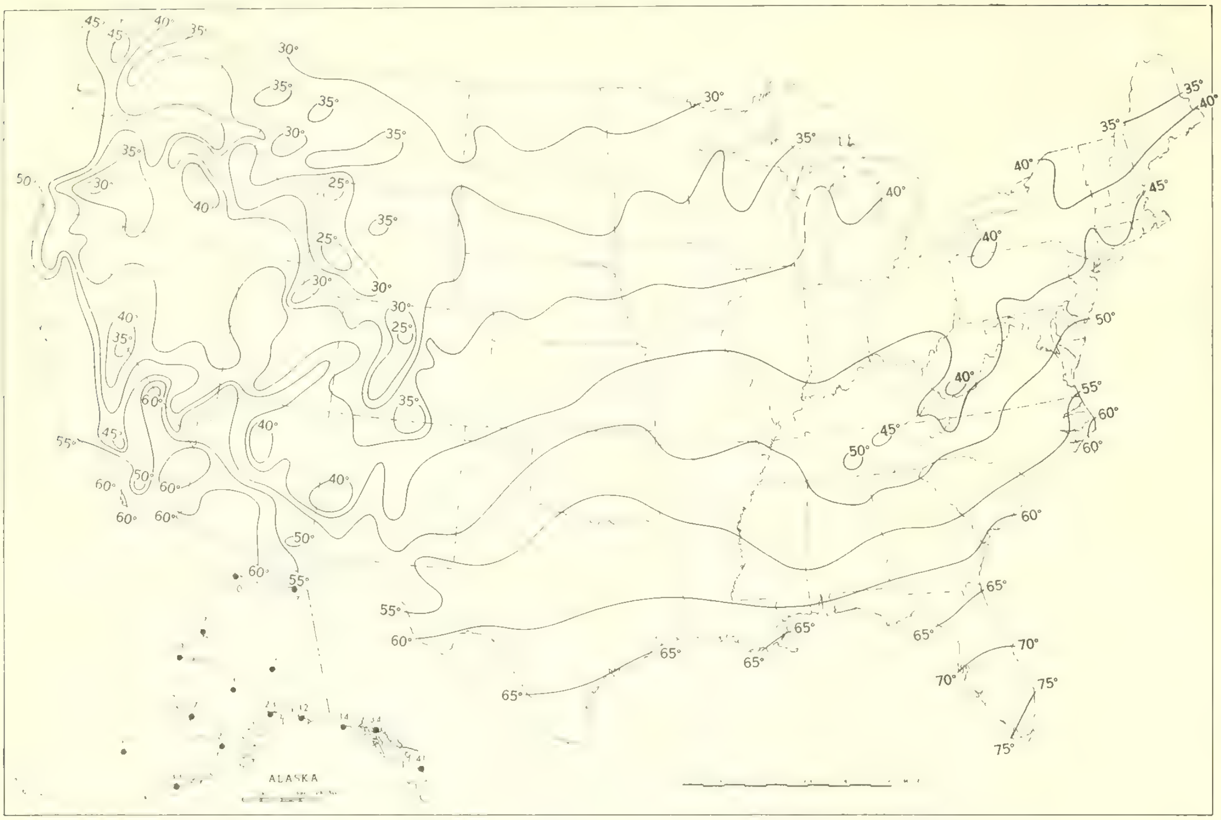
NOVEMBER 1960

Station	Day of month																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bismarck, N. Dak.	278	248	266	313	292	290	---	---	361	---	---	---	---	318	---	328	295	---	302	292	235	---	316	320	281	---	---	---	373	317	
Caribou, Maine	---	---	---	---	---	335	333	301	---	---	308	---	---	---	---	---	295	295	307	---	306	290	---	321	---	---	277	278	---	---	
Fort Worth, Texas	249	255	261	247	252	248	244	253	261	254	250	---	227	---	---	---	244	264	244	---	---	---	231	251	230	---	---	232	238	249	
Green Bay, Wis.	---	---	269	---	---	332	295	---	---	305	286	---	264	---	---	307	309	---	---	295	264	258	297	---	287	261	---	287	---	390	
Mauna Loa, Hawaii	266	---	252	269	262	261	266	261	264	---	---	---	258	260	262	267	---	258	257	260	257	256	261	260	258	260	255	260	260	257	

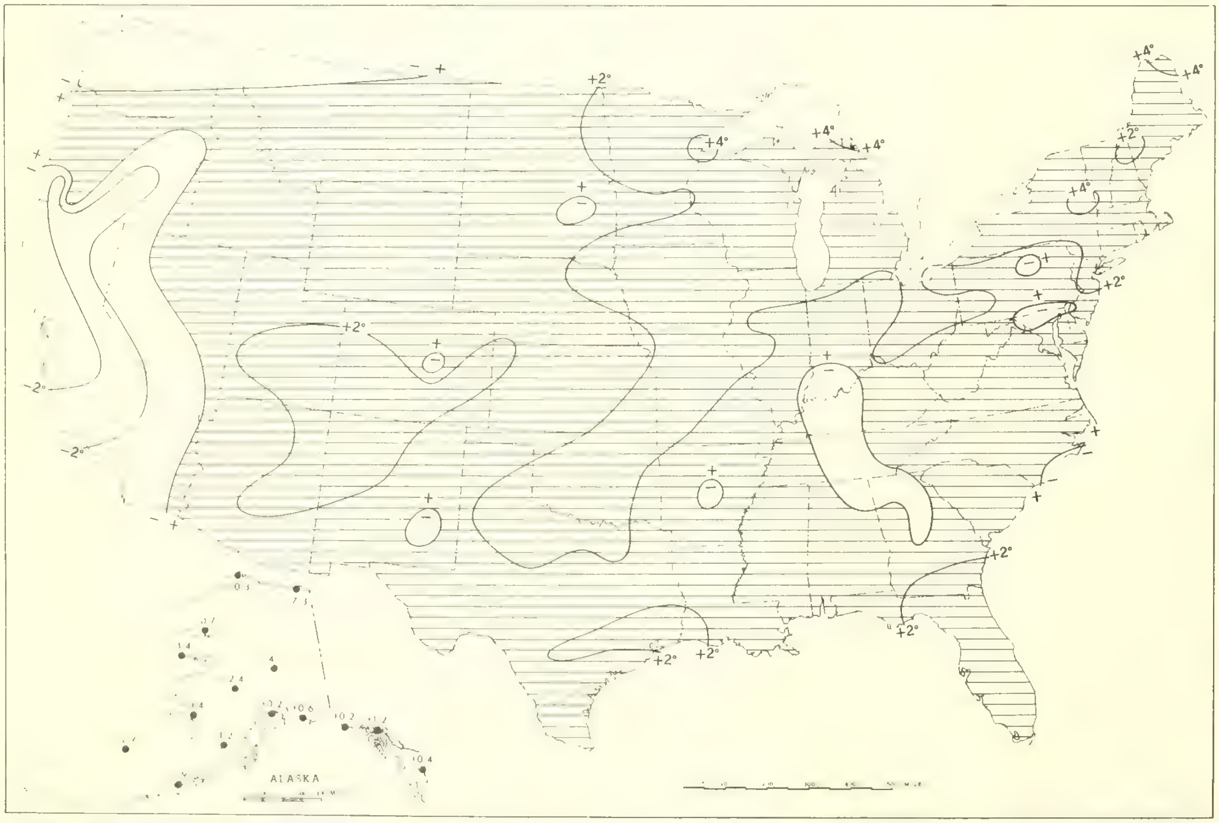
The spectrophotometer measures the total amount of ozone in the atmosphere, i. e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observations can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations; therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational procedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer," Annals of the International Geophysical Year, Volume V, Pergamon Press, 1957.

Chart I. A. Average Temperature (°F.) at Surface, November 1960.



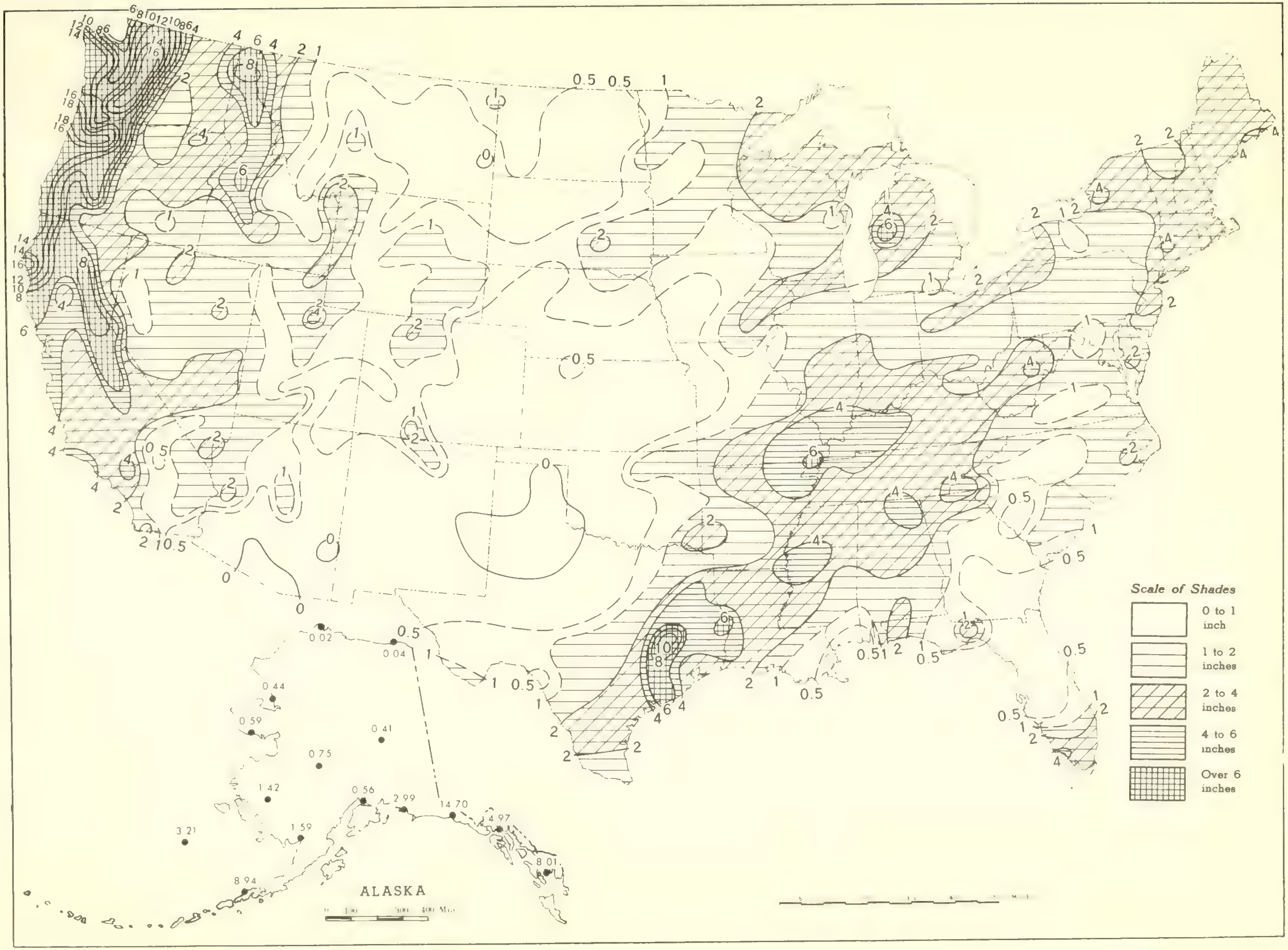
B. Departure of Average Temperature from Normal (°F.), November 1960.



A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

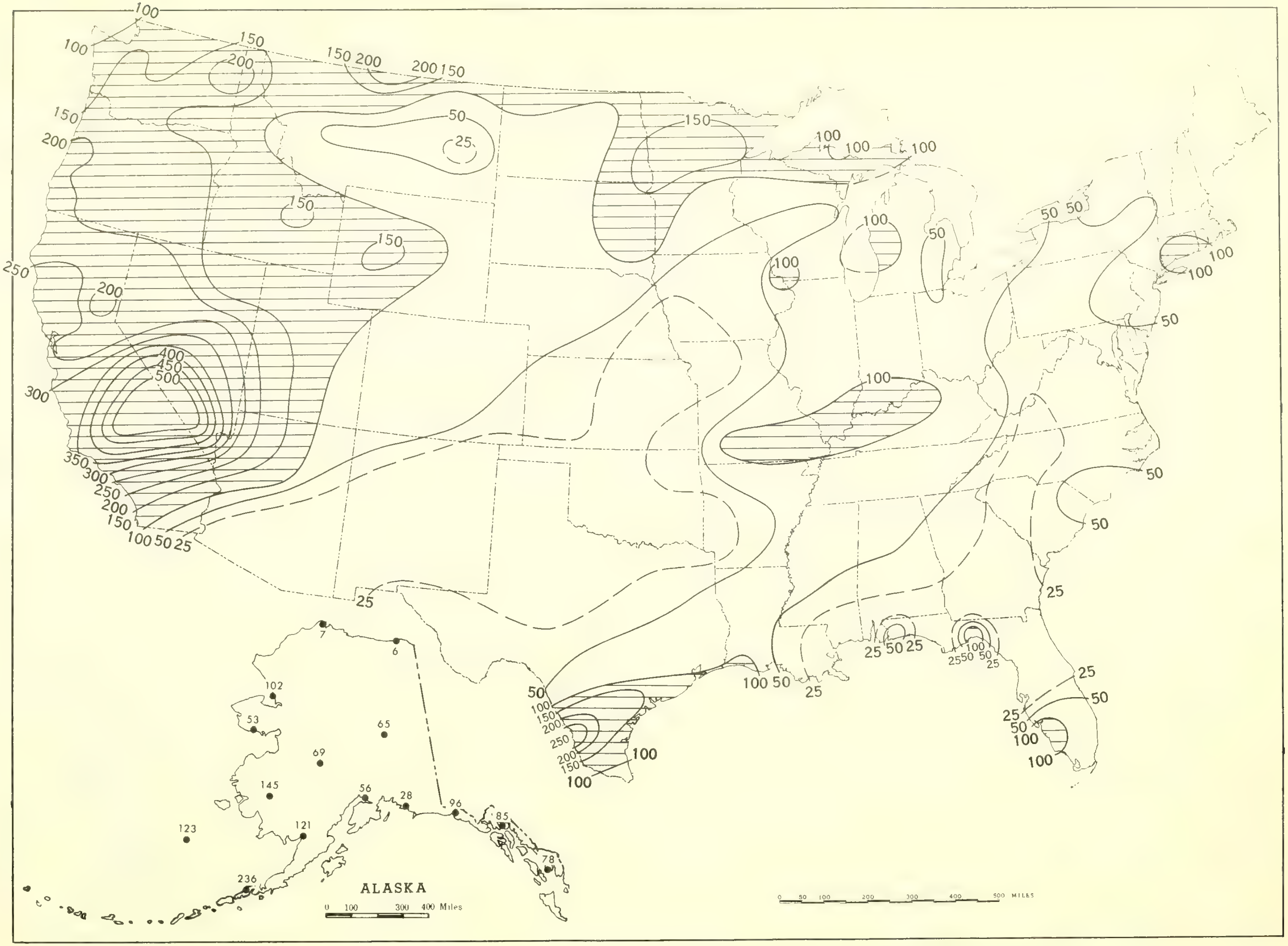
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), November 1960.



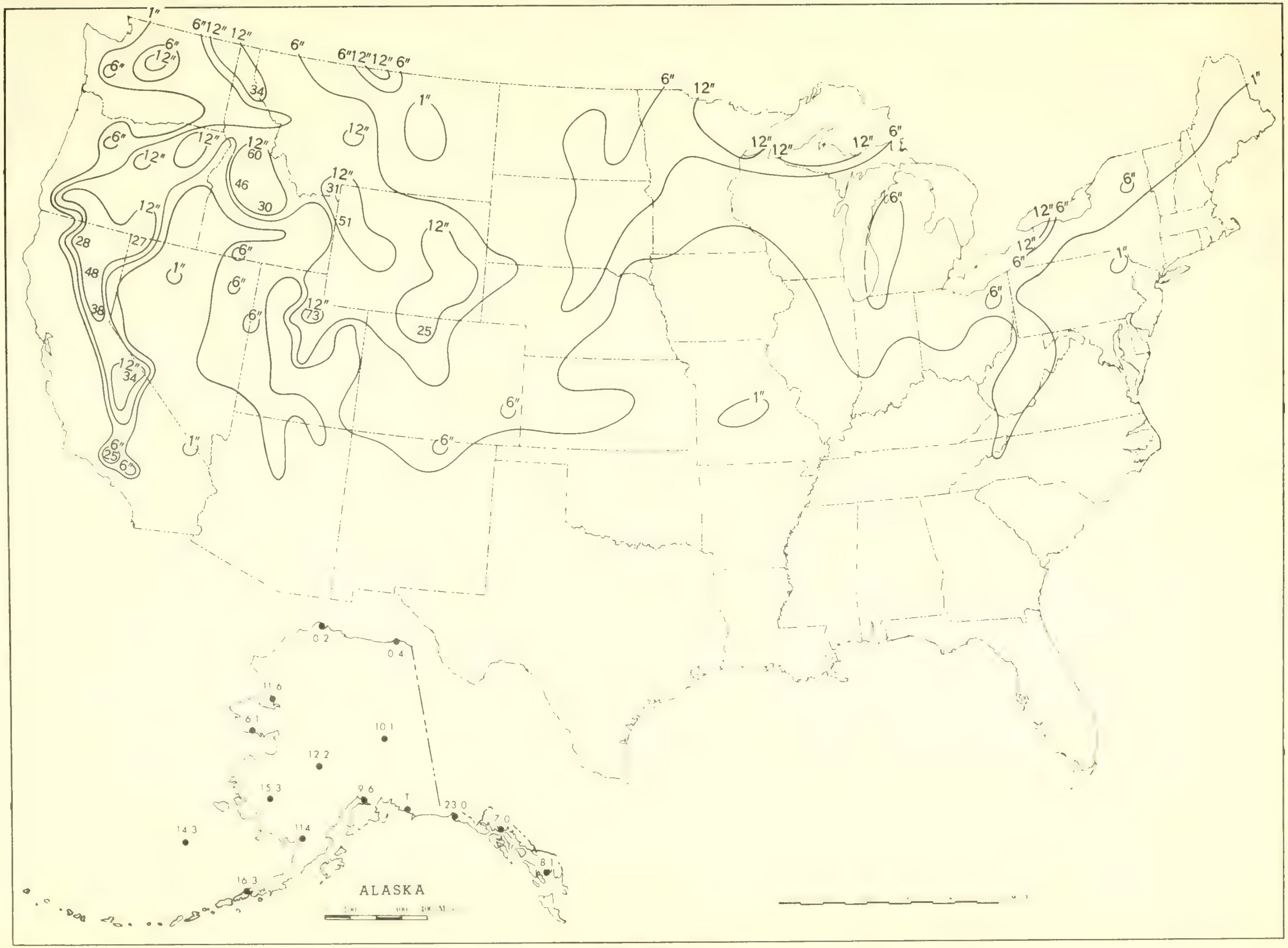
Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, November 1960.



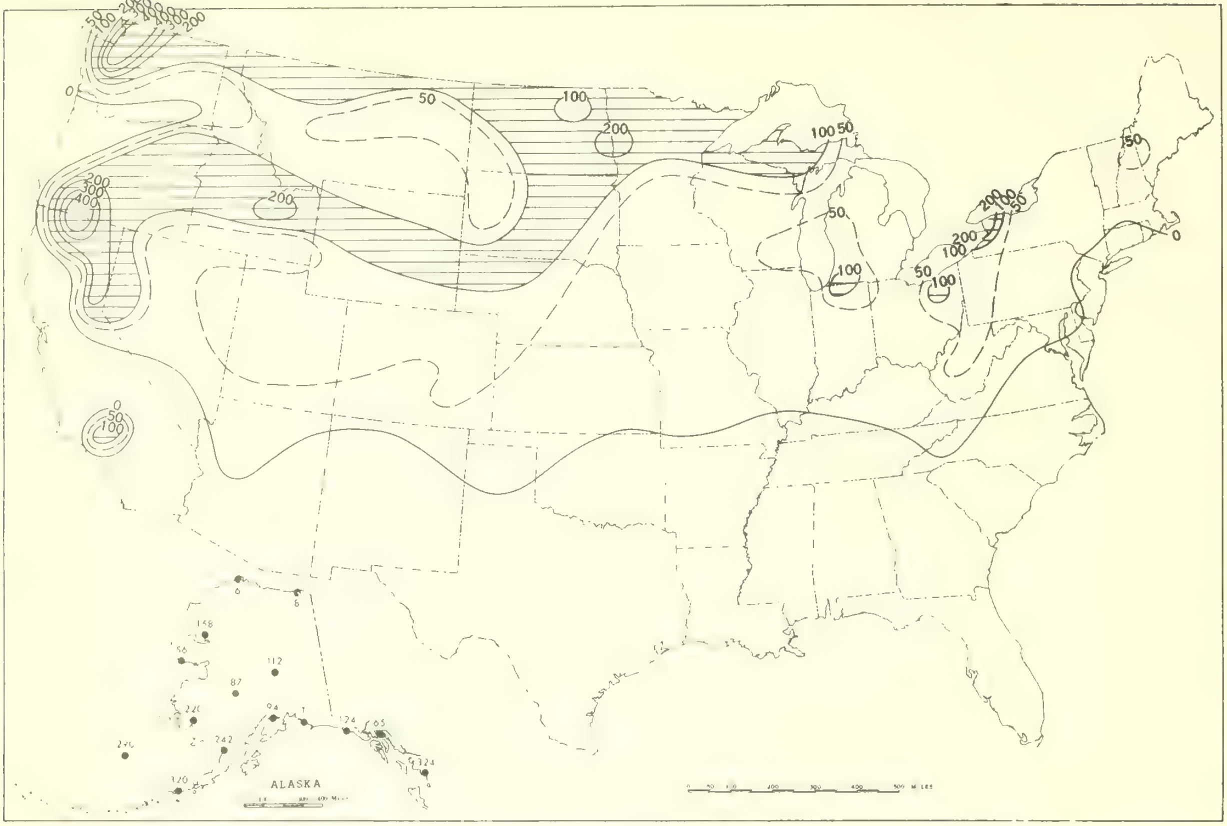
Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart IV. Total Snowfall (Inches), November 1960.

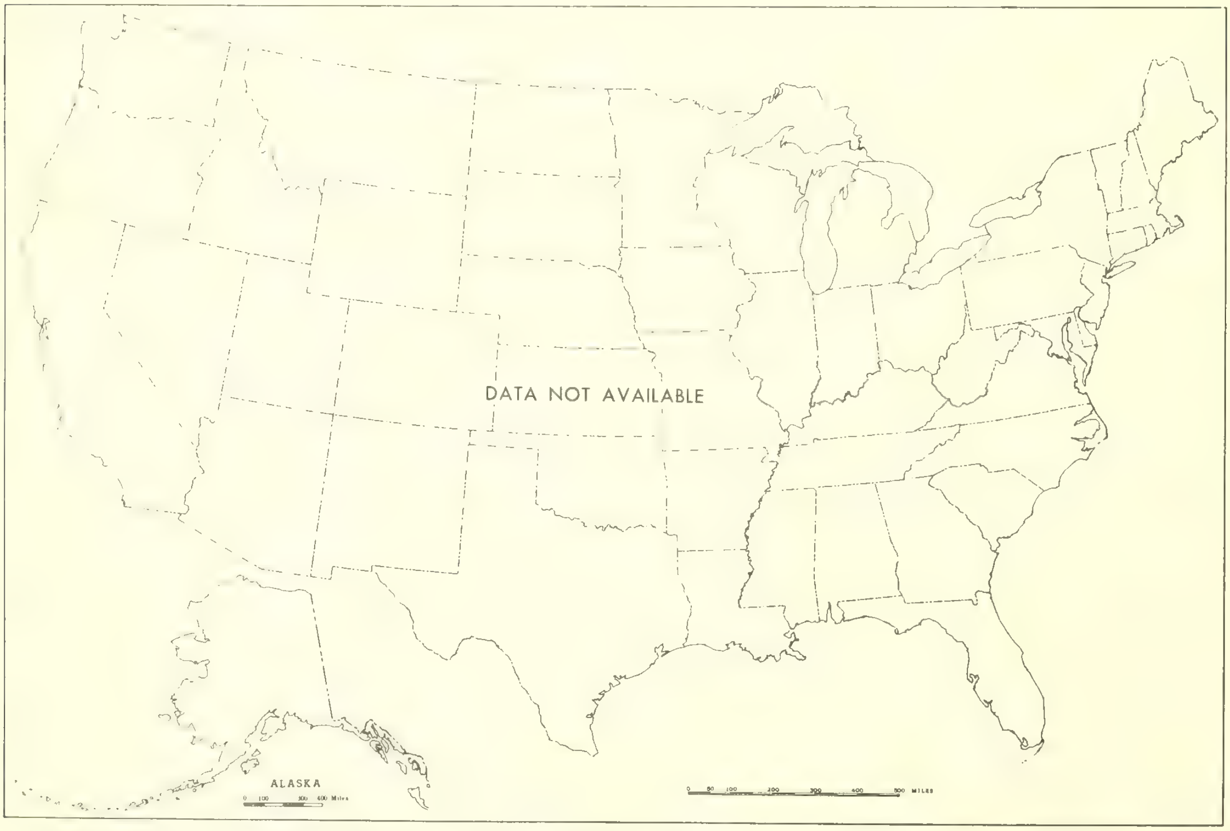


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, November 1960.

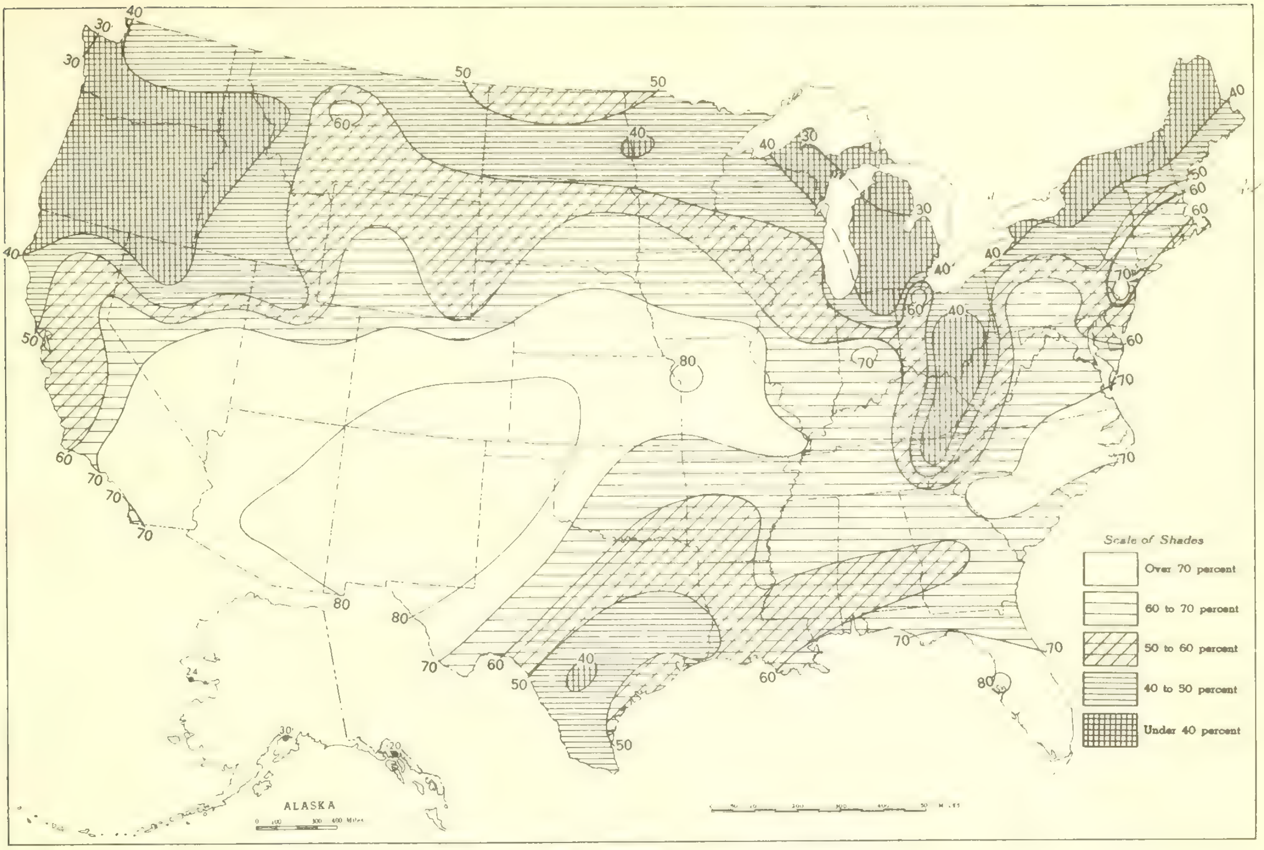


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., November 28, 1960.

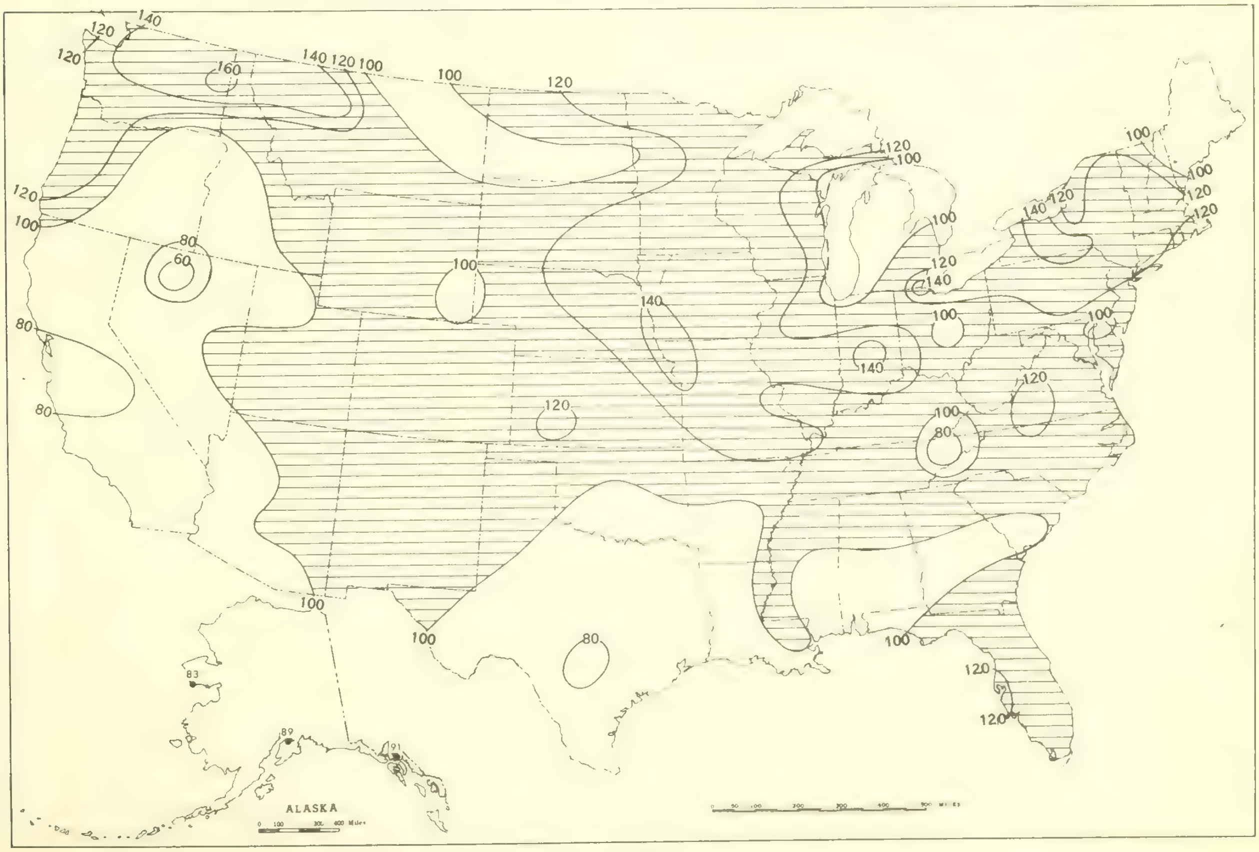


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a. m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VII. A. Percentage of Possible Sunshine, November 1960.

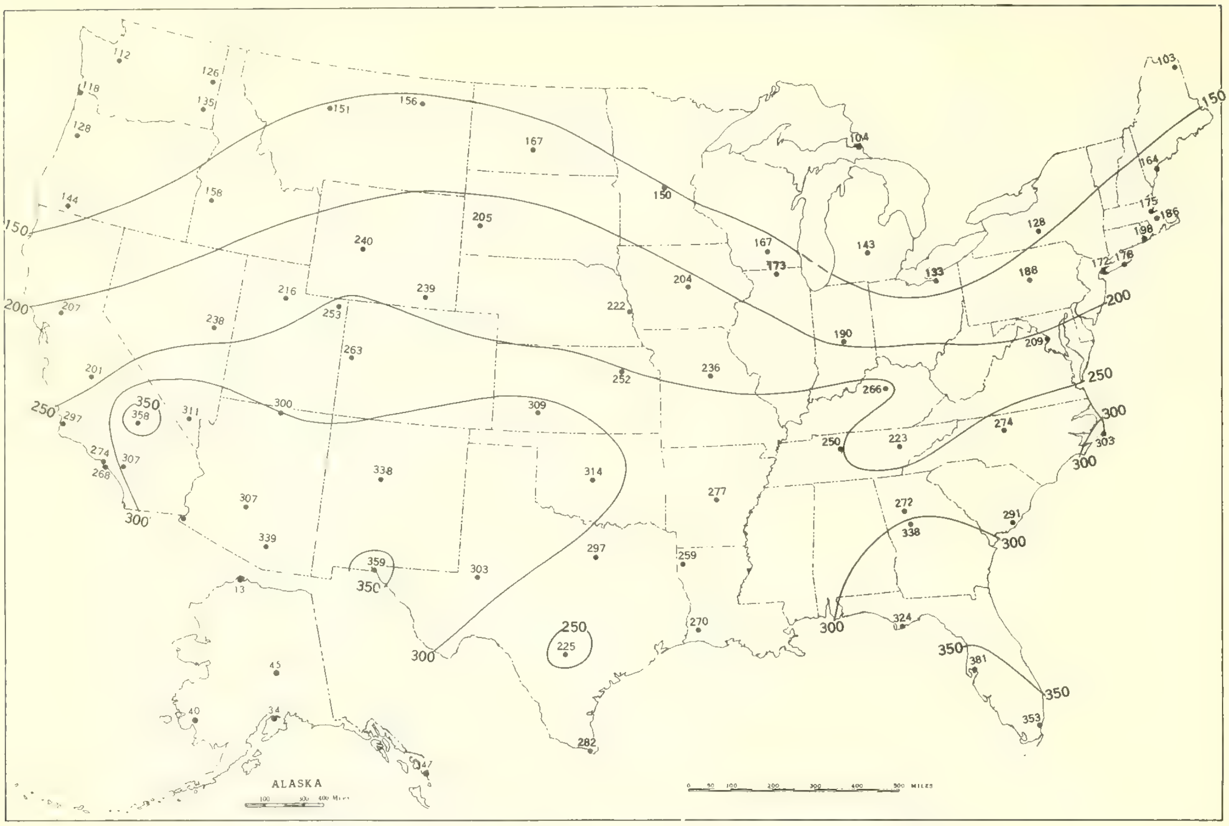


B. Percentage of Mean Monthly Sunshine, November 1960.

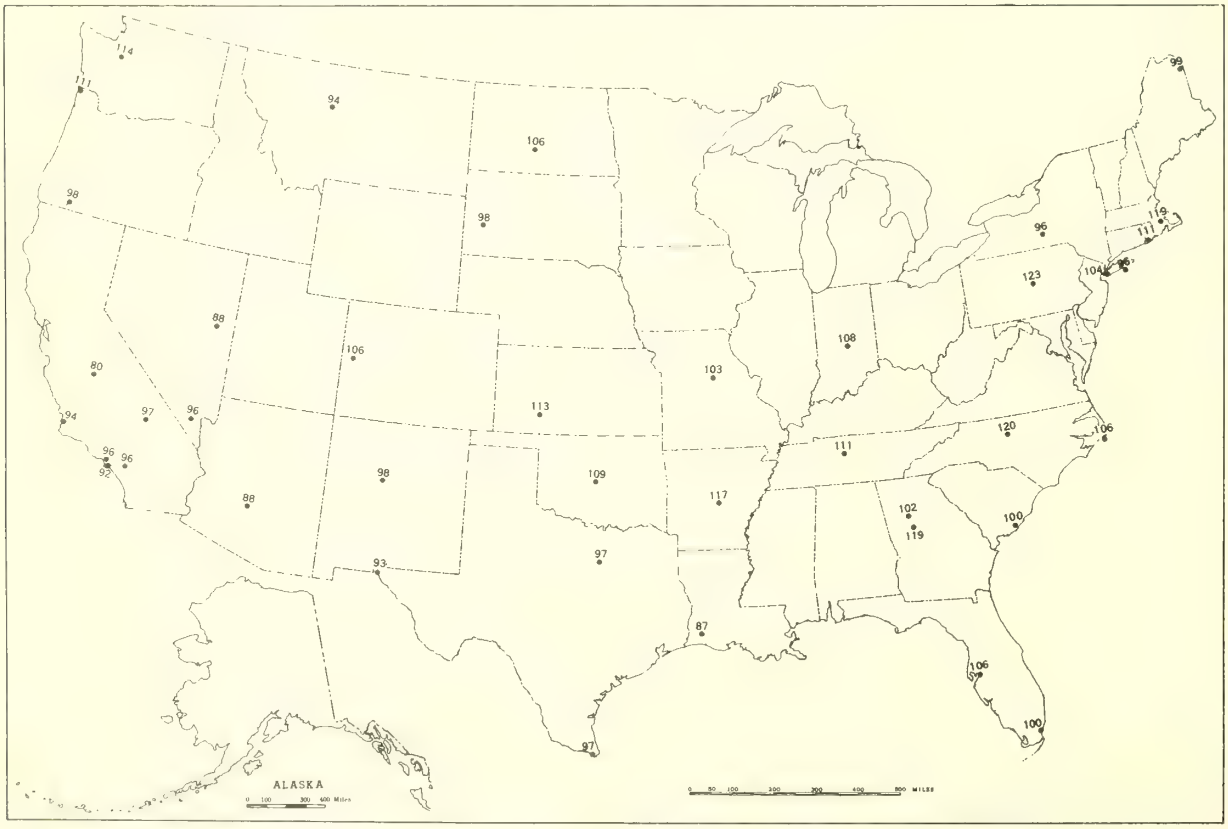


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, November 1960.



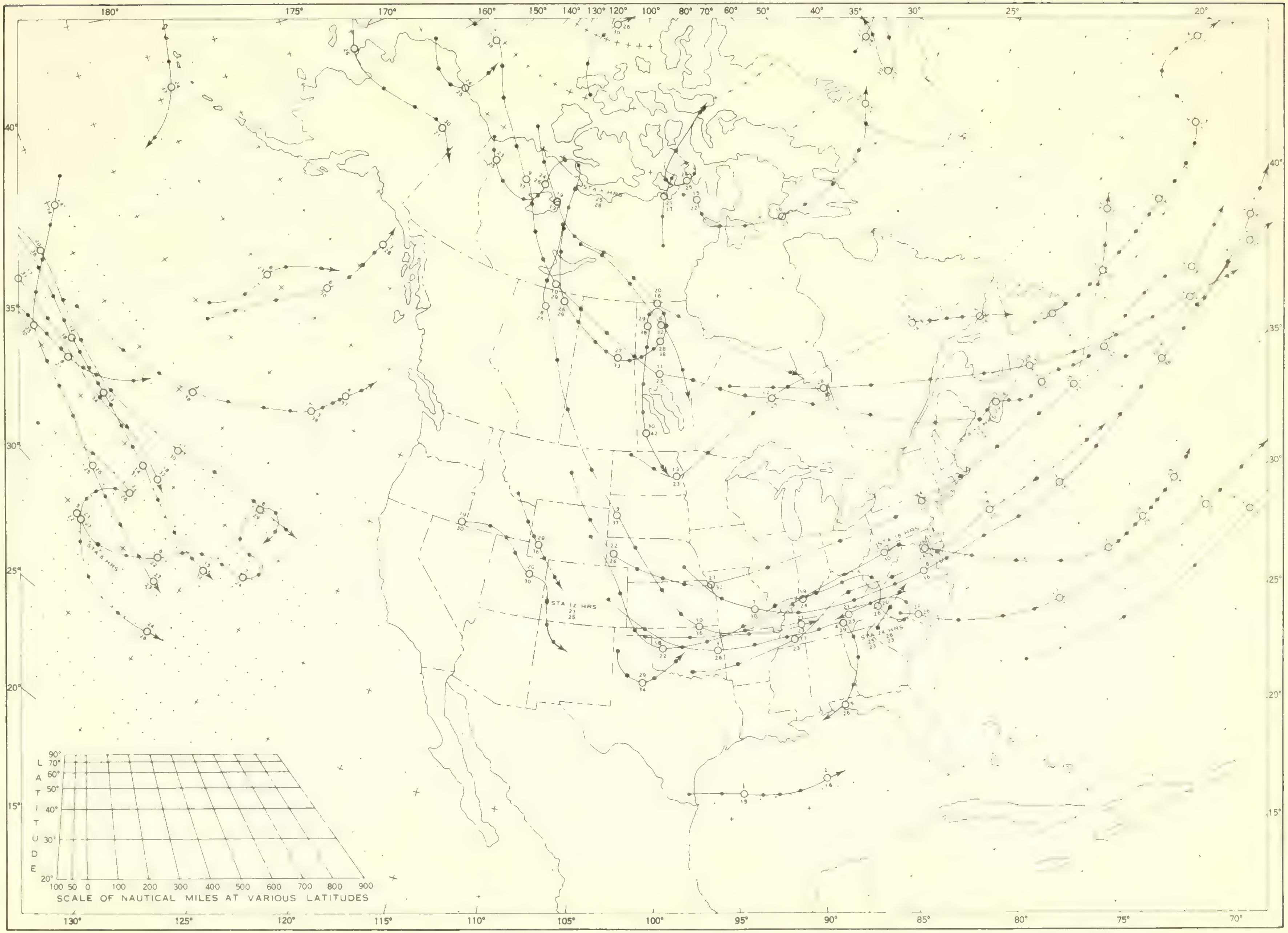
B. Percentage of Mean Daily Solar Radiation, November 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. $^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

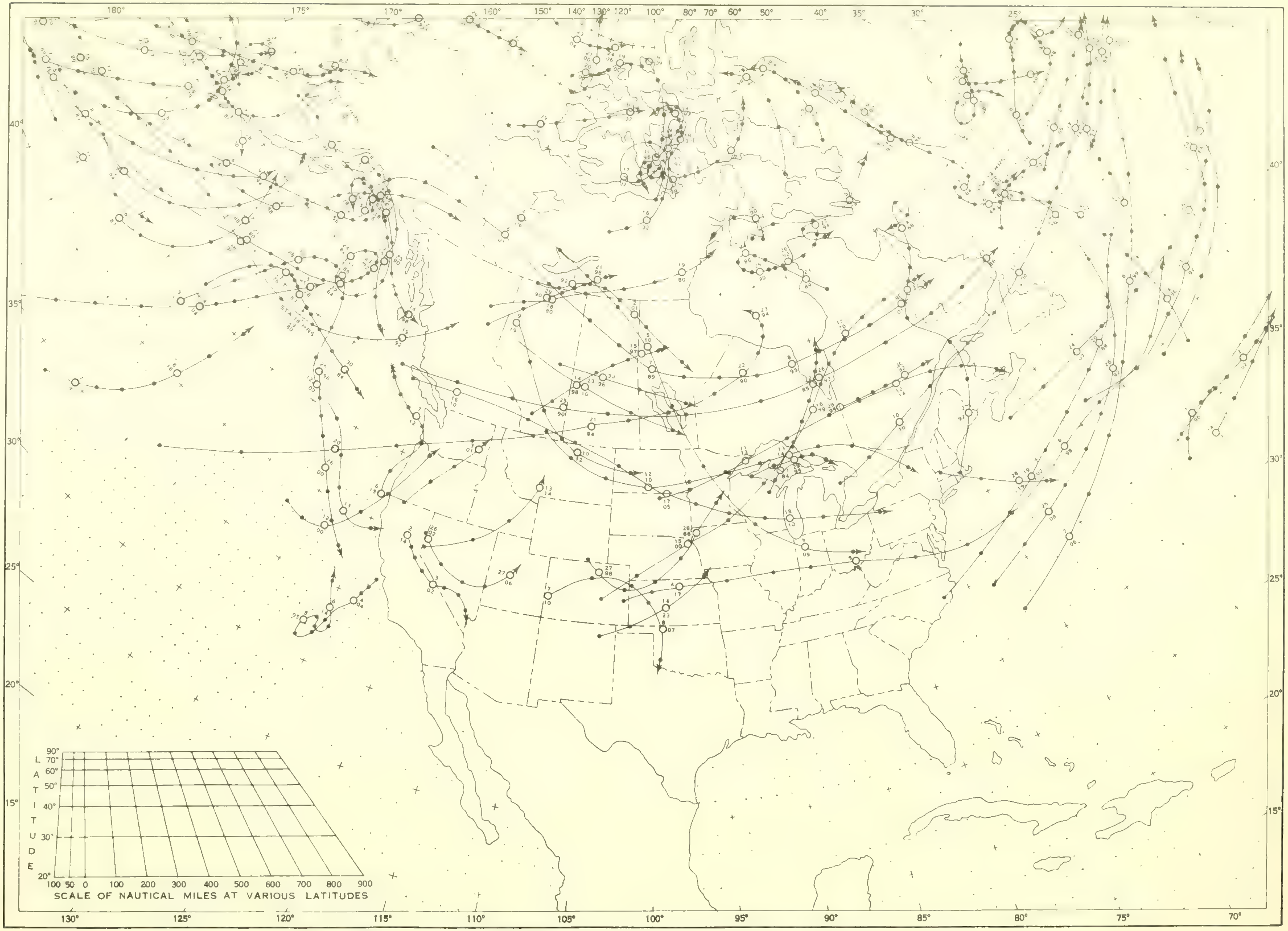
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, November 1960.



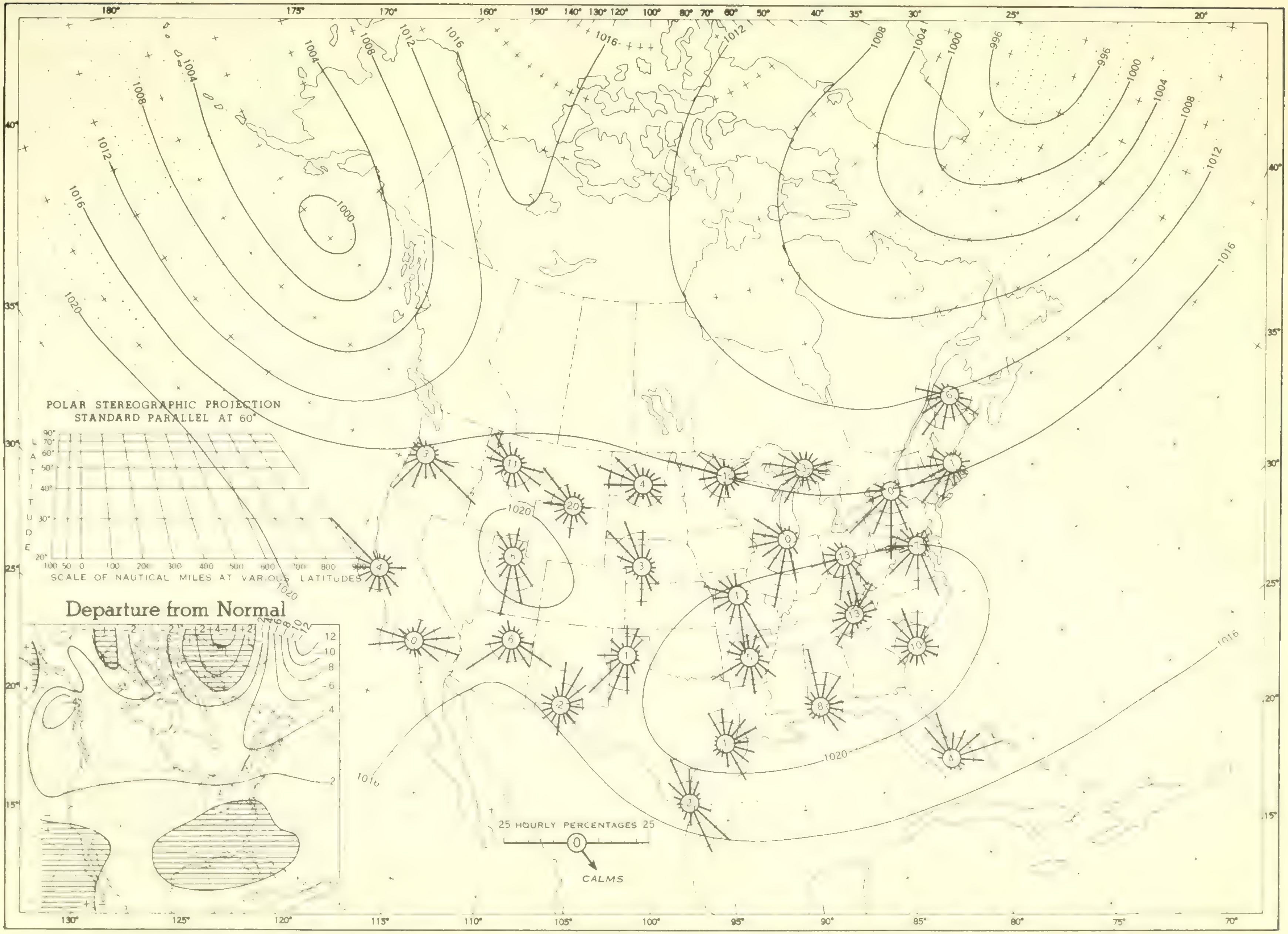
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, November 1960



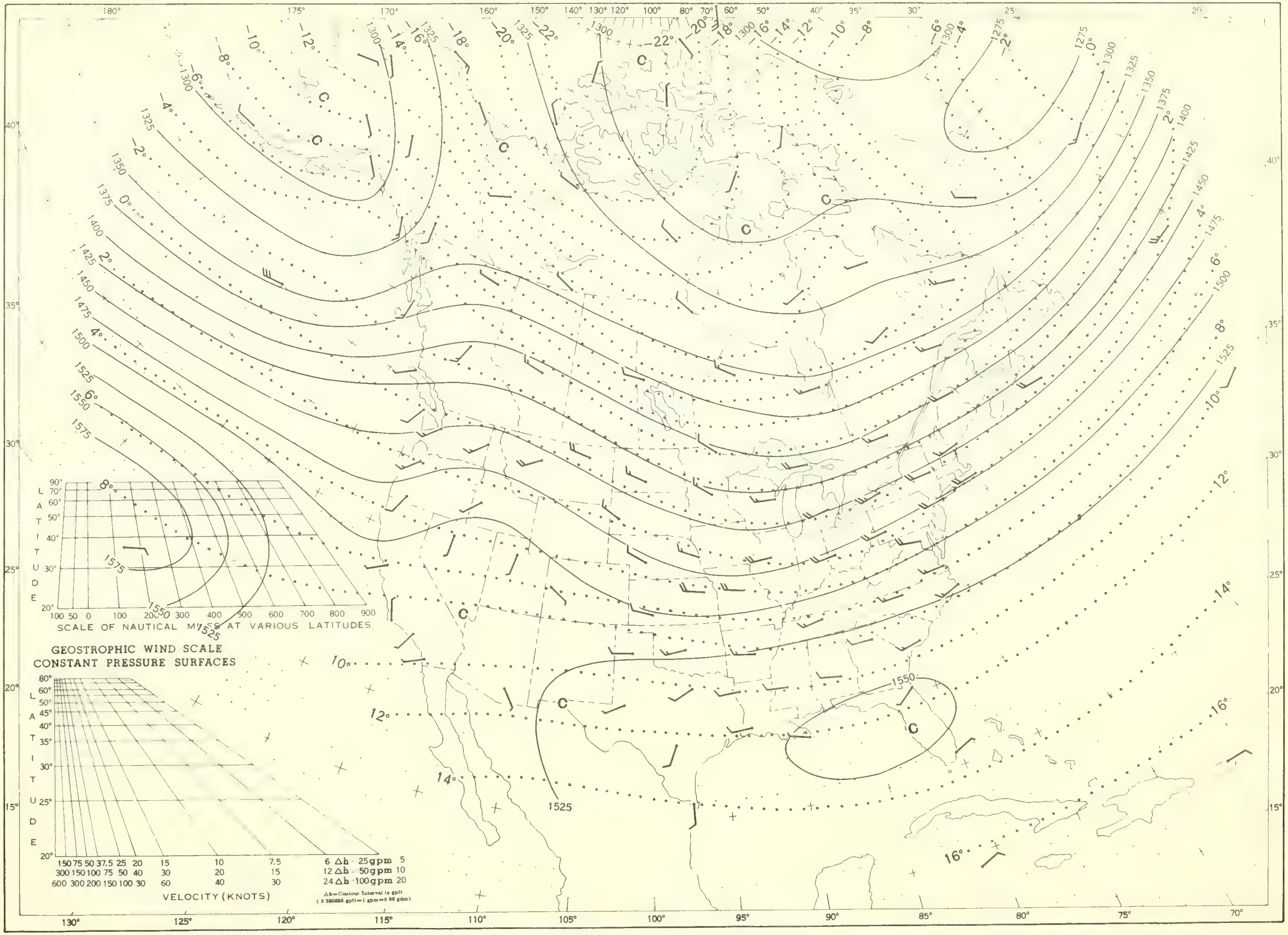
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, November 1960. Inset: Departure of Average Pressure (mb.) from Normal, November 1960.



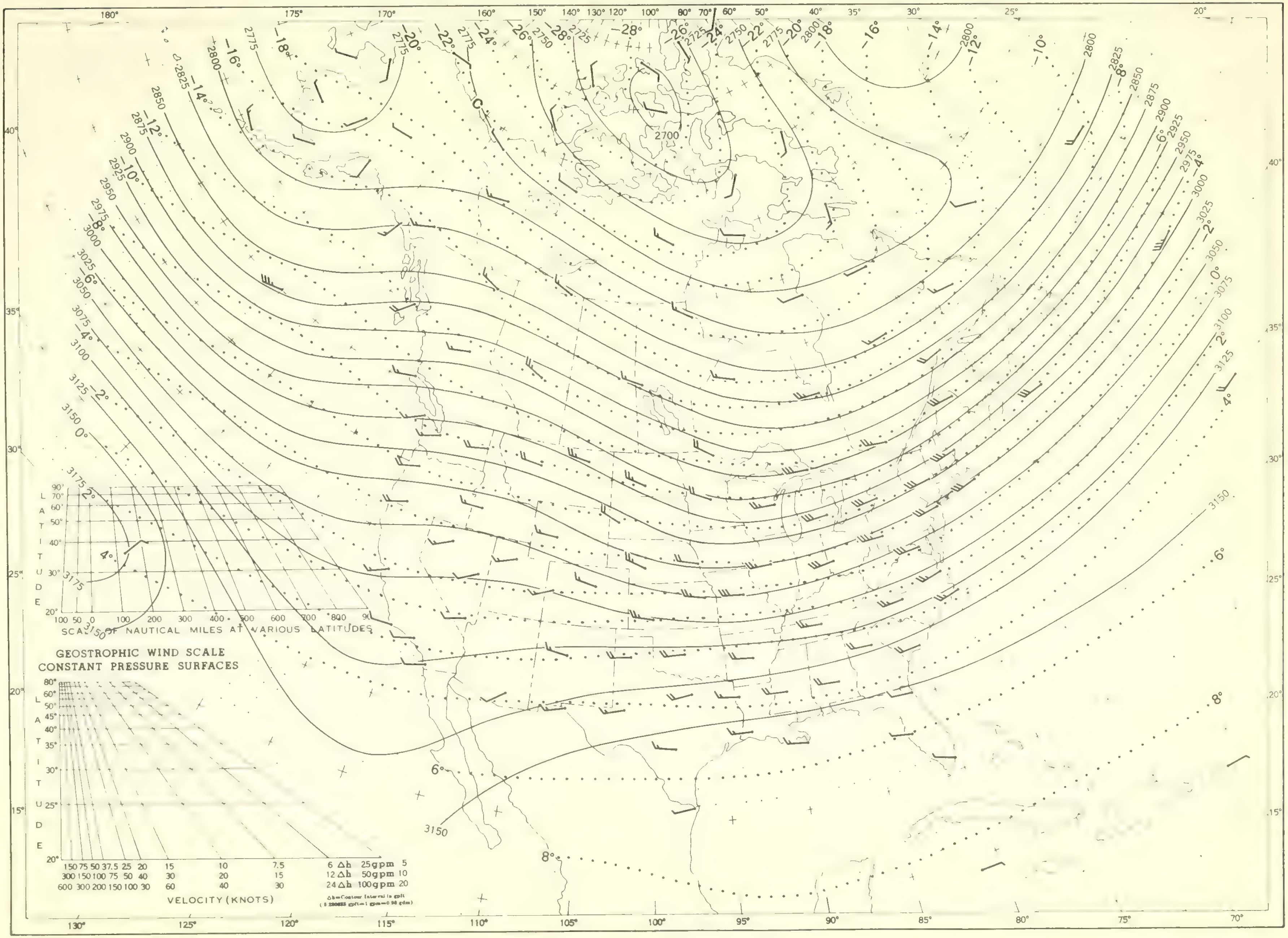
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, November 1960. Average Height and Temperature, and Resultant Winds.



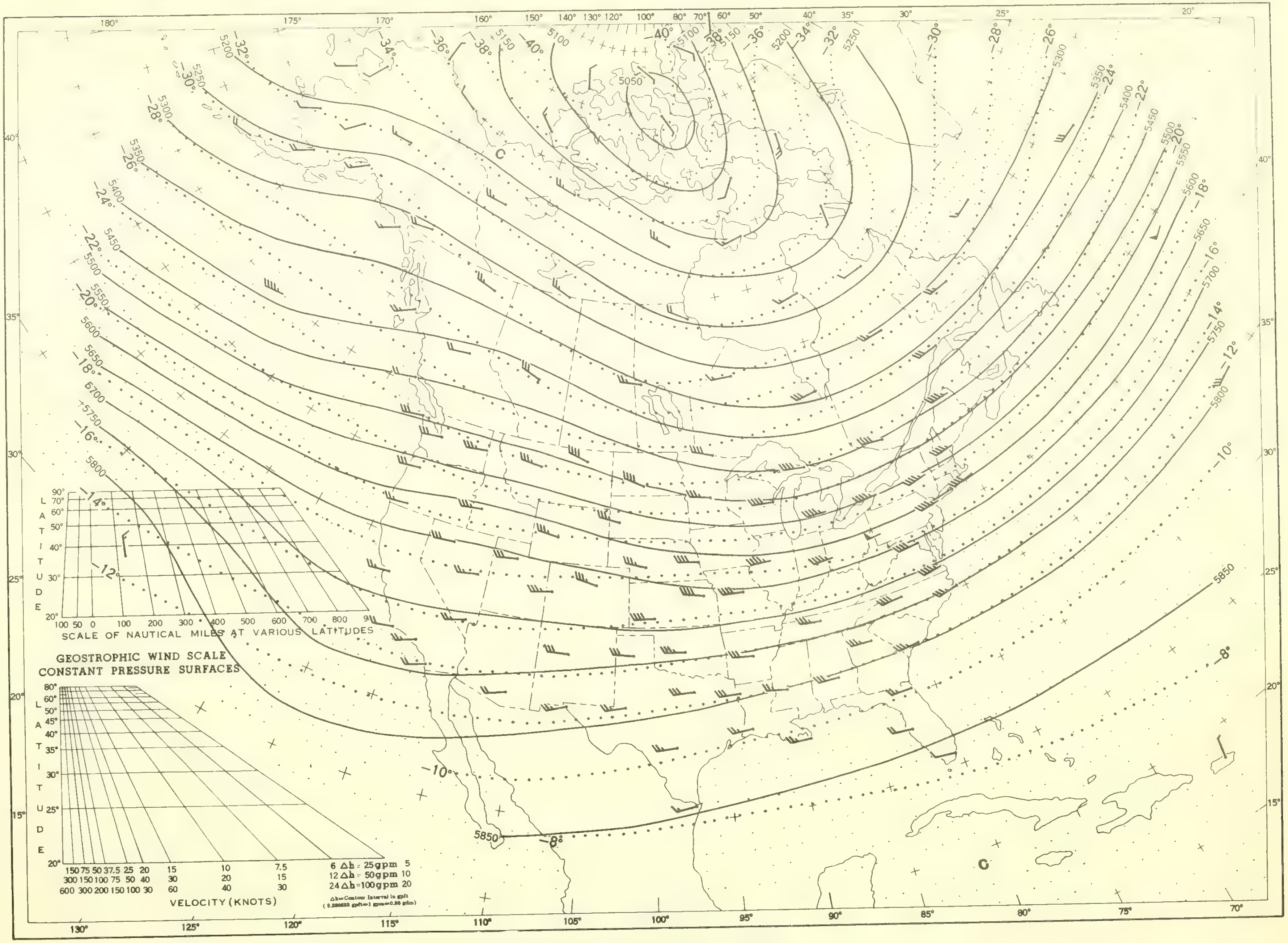
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, November 1960. Average Height and Temperature, and Resultant Winds.



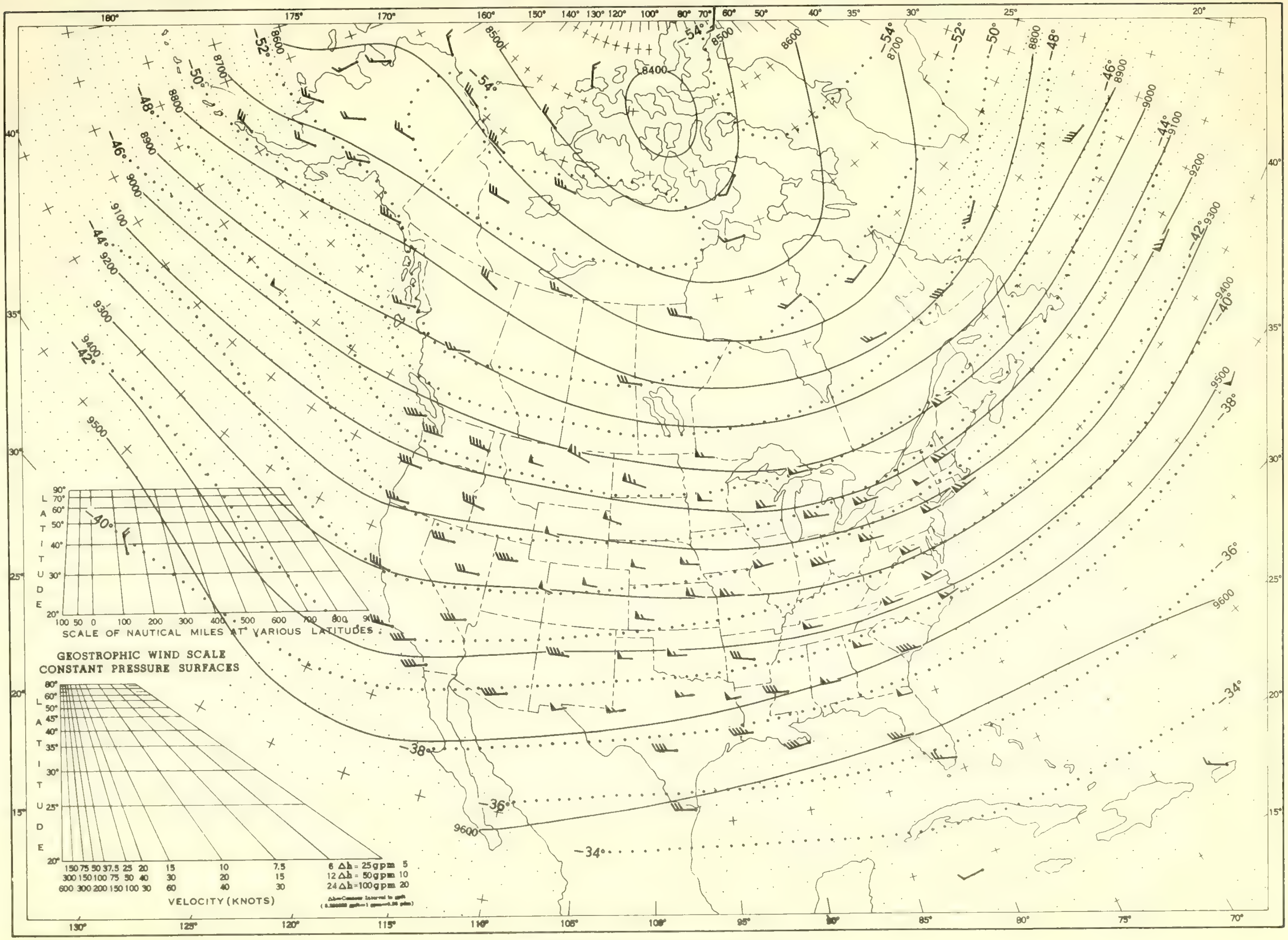
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, November 1960. Average Height and Temperature, and Resultant Winds.



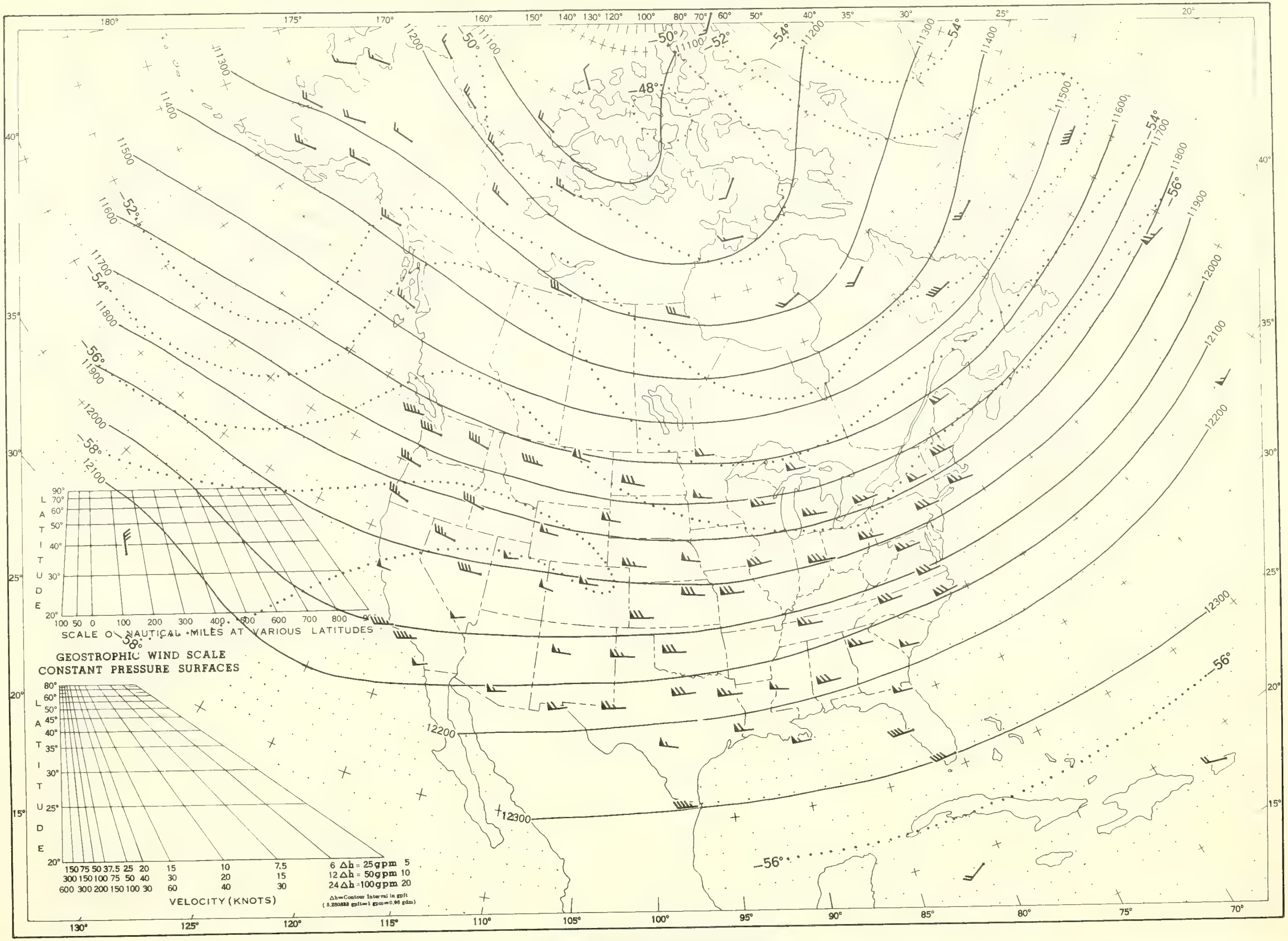
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, November 1960. Average Height and Temperature, and Resultant Winds.



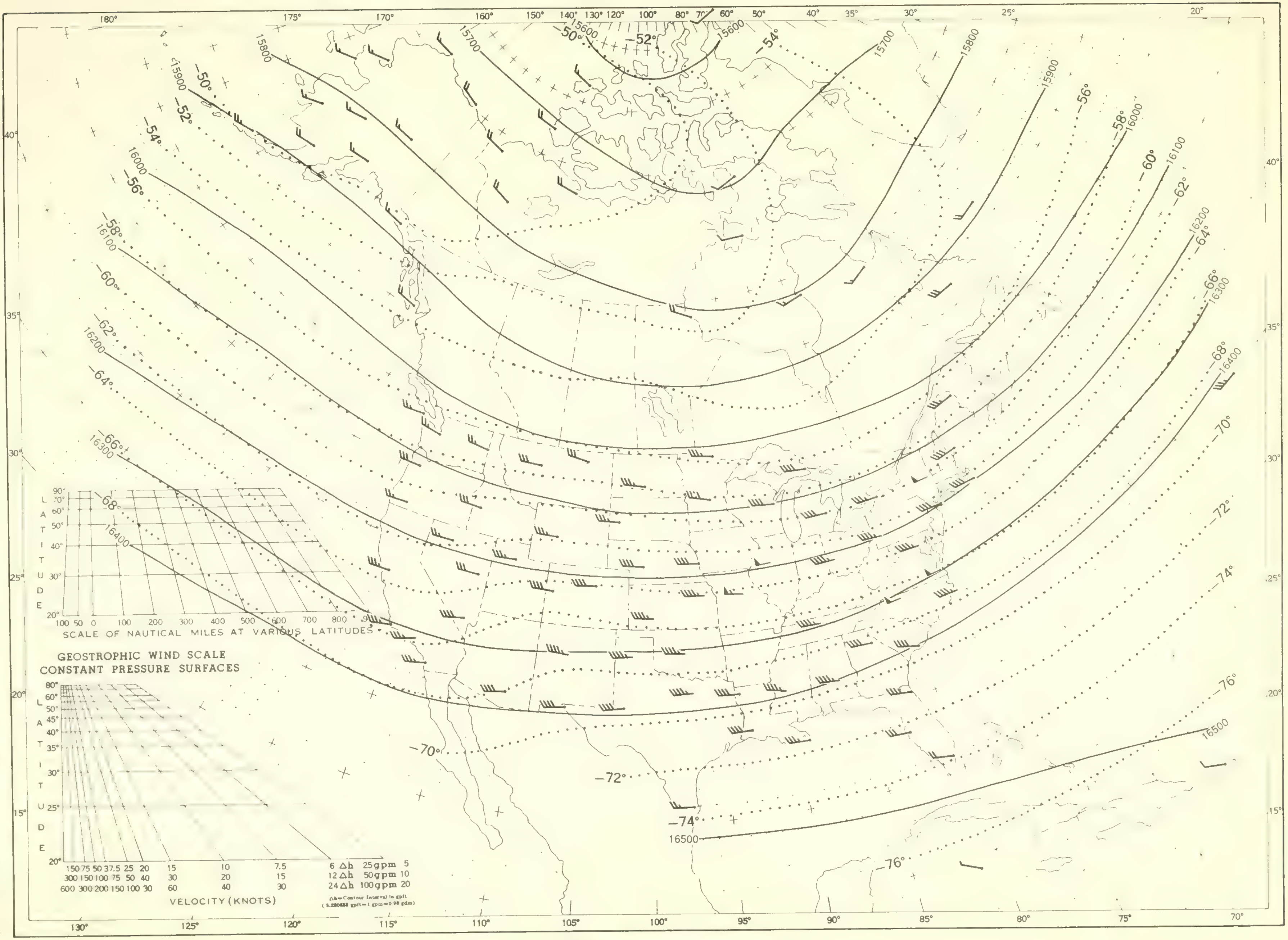
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, November 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, November 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

U. S. DEPARTMENT OF COMMERCE
LUTHER H. HODGES, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 12

DECEMBER 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

The weather of December 1960 was unusually cold with considerable storminess. Subzero temperatures occurred frequently in northern areas east of the Rocky Mountains, and freezing on occasions extended into extreme southern areas resulting in some damage to citrus and tender vegetable crops.

Precipitation was well above normal in most of the area between the Rocky Mountains and the Mississippi River, with some flooding in the lower Great Plains during the first half of the month. A severe snowstorm in the Northeast on the 11th and 12th left a deep mantle of snow that persisted until the end of the month. In the Far West precipitation for the month and the mountain snowpack were below normal.

TEMPERATURE.--East of the Rocky Mountains frequent invasions of cold air during the month kept temperatures below normal more than two-thirds of the time in the South and East, where monthly averages ranged from 4° to 6° below normal. Lowest temperatures generally occurred on the 21st, 22d, and 23d, when subzero minima extended into the southern Appalachians and freezing to the lower Rio Grande Valley in Texas and to the vicinity of Lake Okeechobee in southern Florida. In extreme north-central areas streams and shallow lakes were frozen over by the end of the second week. Louisville, Ky., and Harrisburg, Pa., recorded their lowest temperatures on record for December on the 23d, -9° and -8°, respectively; and -8° at Evansville, Ind., on the same date was the lowest temperature there so early in the winter. December 1960 was the only month during 64 years of record at Richmond, Va., that the minimum temperature was below freezing everyday in the month. This was the fourth coldest December in 82 years at Little Rock, Ark.; the fifth coldest since 1878 at Charlotte, N. C.; and the coldest since 1935 at Charleston, S. C., and Jacksonville, Fla. At Huron, S. Dak., the monthly maximum temperature of 38° was lower than any other December maximum temperature on record.

In the Far West temperature for the month generally averaged about 2° to 4° below normal. Freezing occurred on several nights in the Far Southwest early in the month, with a low of 28° at Phoenix, Ariz., on the 7th and 28° at Fresno, Calif., on the 8th.

PRECIPITATION.--During the first 12 days of the month, precipitation began in the Far West and spread across the entire country. One to over 2 inches fell along the north Pacific coast and in much of the northern two-thirds of California the first few days of the month as a series of storm systems moved inland from the Pacific Ocean. One of these storms gained strong intensity in the Southwest on the 3d and moved northeastward across the Great Plains and Great Lakes on the 4th and 5th, leaving an inch or more of precipitation in the upper Mississippi Valley.

Heavy precipitation over the south-central portion of the Nation from the 5th to the 11th totaled from 2 to over 4 inches, and resulted in considerable flooding along many streams in east Texas, southern Arkansas, and western Louisiana that continued through the 19th. On the 12th and 13th a storm produced 1 to over 2 inches of precipitation in middle and north Atlantic coastal areas. Precipitation along the north Pacific coast on the 16th to the 19th totaled from 2 to over 4 inches. From 1/2 to over an inch of precipitation fell in the lower Mississippi and Ohio Valleys and Northeast on the 21st. During the closing days of the month an inch or more of precipitation fell east of a line joining Maine and Texas, except in the extreme Southeast where amounts were much lighter. These rains were very beneficial in parts of Alabama, Georgia, and Florida, where soils had been dry for several weeks. Laredo, Tex., measured 4.65 inches for the month, the wettest December there in 30 years.

In the Great Basin, central and southern California, western Arizona, and much of the Great Lakes region precipitation for the month was less than 50 percent of normal.

SNOW.--Snow cover at the beginning of December was generally light and limited to extreme northern areas.

Snowfall in southern New Mexico and west Texas from the 6th to the 10th was unusually heavy for those areas. In some sections of southern New Mexico and the Texas Panhandle falls of 17 and 18 inches were reported and additional light snowfall in those regions on the 13th boosted the monthly total to 20 inches at Roswell, N. Mex., and to 10.1 inches at El Paso, Tex. -- a record total for December at Roswell, and a record for any month at El Paso.

The most notable snowfall of the month occurred during a storm that developed in the northwestern Gulf of Mexico on the 10th, moved northeastward to the Virginia coast on the 11th, and northward off the immediate Atlantic coast on the 12th. Snowfall during the storm generally ranged from 3 to 5 inches in extreme western Oklahoma, Kansas, central portions of Missouri, Illinois, and Indiana, and in most of Ohio and West Virginia, with much heavier falls in the Atlantic Coastal States from Virginia northward. In Maryland falls ranged from 1 to 7 inches in the Delmar Peninsula and 9 to 15 inches over the remainder of the State, with 8.5 inches measured in Washington, D. C. Philadelphia, Pa., measured 12 inches on the ground during the storm, New York City 17 inches, which was the heaviest snowfall there for so early in the season, and Boston, Mass., 13 inches. In southern New England, where severe blizzard conditions occurred, the storm was one of the most paralyzing in many years for so early in the season. Locally heavy snowfall occurred in the central Appalachians during storms on the 20th and 21st and again at the end of the month.

Owing to cold weather following the snowstorm of the 10th to the 12th, the snow cover in northern areas east of the Rockies remained during most of the remainder of the month. With lighter than usual snowfall in the Far West, the mountain snowpack was generally below to much below normal at the end of December.

Total snowfall for December set new records at several stations in the Northeast. Among these were Columbus, Ohio, 17.3 inches; Harrisburg, Pa., 22.1; Blue Hill, Mass., 21.0; and Trenton, N. J., 21.5 inches.

DESTRUCTIVE STORMS. --Snow and glaze were the costliest storms in the contiguous United States during December 1960. Heavy snowstorms in the Northeast were blamed for more than 100 deaths, and for snow removal expenditures, loss of business, and utility damage totaling many hundreds of thousands of dollars. Glaze damage that occurred in parts of the lower Great Plains during the period from the 6th to the 11th, and in Massachusetts and New Hampshire on the 16th also totaled several hundred thousand dollars. Damaging floods occurred in Puerto Rico and the Virgin Islands, following heavy rains November 29 to December 4, 1960.

CONDENSED CLIMATOLOGICAL SUMMARY

DECEMBER 1960

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	2 Stations	78	6+	Hamilton	3	22	Bridgeport 2W	5.25	Pine Hill	0.53
Arizona	Tumacacori NM	84	2	Maverick	-12	11+	Jacob Lake	3.79	8 Stations	.00
Arkansas	Portland	74	5	Gilbert	2	22	Cove	11.41	Batesville L&D No. 1	2.76
California	San Gabriel Fire Dep	88	20	Big Bear Lake	-14	9	Honeydew 2WSW	19.28	12 Stations	.00
Colorado	Eversoll Ranch	77	2	Taylor Park	-33	16	Wolf Creek Pass 4W	3.70	Kauffman 4SSE	.14
Connecticut	Westbrook	60	5	Falls Village	-14	28	Pauchaug Forest	4.42	Barkhamsted	1.98
Delaware	3 Stations	66	6+	Newark University Farm	1	23	Selbyville	4.26	Dover	2.02
Florida	2 Stations	86	10	Mayo 5NW	16	14	Monticello 2S	4.96	Fellsmere	T
Georgia	do	78	7	Blairsville Exp Station	0	22	Stanley Gap	4.77	Juliette	.92
Idaho	Twin Falls 3SE	62	2	Obsidian 3SSE	-26	6	Pierce RS	3.46	Arco 3NW	T
Illinois	2 Stations	68	5	Rochelle 1W	-23	23	Cairo WB City	5.87	Princeville 2NW	.26
Indiana	Vevay	67	5	La Porte	-22	23	Evansville	2.96	Kentland	.51
Iowa	2 Stations	66	4	Cascade	-28	23	Britt	1.46	Lorimor	.06
Kansas	Elkhart	74	2	Atwood	-10	22	Girard	3.65	Washington	.19
Kentucky	Hindman	72	5	2 Stations	-12	22	Glasgow	5.55	Warsaw Markland Dam	1.13
Louisiana	Golden Meadow 9NW	82	27	Urania	11	23	Antioch Fire Danger T	11.64	Buras 2SE	2.48
Maine	2 Stations	55	7+	Hiram 2S	-21	28	Belfast	7.05	Upper Dam	1.53
Maryland	La Plata 1W	71	5	Oakland 1SE	-23	23	Benson Police Barracks	4.18	Frederick Police Brks	1.33
Massachusetts	Fitchburg 2S	64	7	West Cummington	-17	28+	Sandwich	6.43	Adams	1.25
Michigan	Mackinaw City No. 2	60	6	Kenton US Forest	-28	23	Maple City	D2.93	Harrison	.10
Minnesota	Winona	56	5	2 Stations	-35	27	Indus	2.46	Glenwood	.21
Mississippi	Picayune 4S	79	7	Houston 2NE	7	22	Rosedale	7.44	Shuqualak	1.93
Missouri	Shelbina	73	4	Louisiana Starks Nur	-14	23	Bloomfield	5.27	King City	.19
Montana	Mosby 2ENE	70	13	3 Stations	-33	21+	Kings Hill	2.64	7 Stations	T
Nebraska	Benkelman	69	25	Oshkosh	-20	22	Hay Springs	1.52	2 Stations	T
Nevada	4 Stations	70	22+	Mountain City RS	-17	5	Orovada	1.26	7 Stations	.00
New Hampshire	Manchester	59	6	Fabyan	-28	28	Windham	3.75	Lebanon FAA AP	1.33
New Jersey	2 Stations	67	7+	2 Stations	-13	28+	Burlington	7.09	High Point Park	.82
New Mexico	Yeso 2S	75	1	Dulce	-23	5	Pinos Altos	2.65	Fort Wingate	.24
New York	Dansville	71	7	Old Forge	-29	28	Pulaski	4.74	Groveland	.20
North Carolina	2 Stations	76	7+	Banner Elk	-7	22	Hatteras	5.27	Spruce Pine 2S	.88
North Dakota	do	53	15+	Willow City	-36	27	Bisbee	1.67	Beulah	.06
Ohio	Chilo Dam 34	69	5	Tom Jenkins Dam	-17	14+	Milford	2.86	Put In Bay Perry Mon	.31
Oklahoma	Wister Dam	75	5	3 Stations	8	21+	Hee Mountain Tower	10.17	Beaver	.34
Oregon	Powers	71	22	Austin 3S	-12	6	Valsetz	9.63	Harper	.02
Pennsylvania	York 3SSW Pump Sta	69	5	Ridgway 3W	-24	13	Glenmoore	3.78	Covington 2WSW	.42
Puerto Rico	Ponce	92	20	Garzas Dam	51	25	Rio Blanco Upper	19.67	Central San Francisco	4.72
Rhode Island	Kingston	57	7+	Kingston	-4	14	Block Island WB AP	6.37	Greenville	3.82
South Carolina	2 Stations	77	8+	Caesars Head	-1	22	Anderson FAA Airport	3.57	Yamassee 4W	1.15
South Dakota	do	69	13+	Britton	-26	27	Deadwood	2.66	Bonesteel	.05
Tennessee	Dale Hollow Dam	70	5	Allardt	-11	22	Savannah	4.99	Odomville	1.25
Texas	Kingsville	88	6	Dalhart FAA Airport	9	9	Hawkins 1E	13.43	Presidio	.31
Utah	2 Stations	67	1	2 Stations	-13	8+	Alta	3.87	5 Stations	.00
Vermont	Bennington 2NNW	62	6	West Burke	-28	29+	Mays Mill	2.58	Saint Albans Bay	.36
Virginia	Rocky Mount	75	6	Monterey	-12	22	Lawrenceville	4.20	Dale Enterprise	.67
Washington	Long Beach 3NNE	65	22	Winthrop 1WSW	-10	16	Aberdeen 20NNE	14.09	Quincy 3S	.27
West Virginia	2 Stations	71	6	Buckeye	-19	23	Canaan Valley	4.60	Brushy Run	.93
Wisconsin	Beloit	62	5	Long Lake Dam	-26	23	Bayfield 6N	D1.68	2 Stations	T
Wyoming	2 Stations	65	3+	Bondurant 3NW	-35	6	Alpine 2S	2.39	3 Stations	.00

D Water equivalent of snowfall wholly or partly estimated, using a ratio of 1 inch water equivalent to every 10 inches of snowfall.

+ And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	No. of days: Max. 90° F. or above	No. of days: Min. 32° F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	No. of days (sunrise to sunset): Clear	No. of days (sunrise to sunset): Partly cloudy	No. of days (sunrise to sunset): Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F	°F.		°F		#		°F	%	In.	In.	In.			In.	In.	M p h		M p h			0-3	4-7	8-10	0-10	%
ALABAMA																																
Birmingham	610	999.0	1025.3	52	31	41.5	-4.2	66	26+	13	22	0	15	33	74	3.21	-2.04	1.00	8	1	T	0	8.1	NNW	38	W	11	9	6	16	6.1	53
Huntsville	605	1001.5	1025.3	50	28	38.5	----	67	6	11	22	0	24	28	70	3.51	----	1.01	10	0	T	T	8.0	SE	*31	NNW	12	14	2	15	5.5	--
Mobile	211	1022.0	1024.7	60	39	49.2	-4.3	75	6	20	22	0	11	39	73	4.16	-1.25	1.57	11	1	T	0	11.0	N	*31	NNW	21	10	3	18	[illegible]	
Montgomery	195	1016.6	1025.2	55	33	43.7	-5.7	70	6	16	22	0	16	32	67	1.93	-2.61	.66	11	0	T	0	8.0	NW	30	NW	31	10	6	[illegible]	5.9	47
ALASKA																																
Anchorage	90	999.7	1004.5	31	20	25.2	11.4	43	7	5	4	0	29	20	80	1.04	.20	.44	8	0	4.9	9	7.9	NNE	*26	ENE	9	1	3	27	8.9	19
Annette	110	1013.2	1017.3	44	36	39.9	3.8	57	8	24	17+	0	9	34	83	13.49	4.38	2.77	22	0	.5	T	12.1	ESE	*35	SSE	2	2	4	25	[illegible]	--
Barrow	22	1015.6	1016.2	-3	-13	-7.9	2.5	24	11	-30	3	0	31	-17	64	.27	.07	.11	9	0	2.7	11	13.7	E	*44	E	8	8	8	8	8	--
Barter Island	39	1014.2	1015.8	3	-8	-2.5	8.4	26	10	-40	3	0	31	-10	70	T	-.46	T	0	0	T	7	15.3	E	*40	E	8	8	8	8	8	--
Bethel	125	995.9	997.1	27	12	19.2	12.0	40	16	-5	31+	0	29	15	84	1.46	.61	.33	15	0	17.6	14	15.4	NE	*41	S	8+	2	5	24	8.3	--
Cold Bay	90	991.5	994.8	38	29	33.3	3.5	43	19	14	11	0	23	29	84	4.75	2.27	1.76	22	0	20.1	4	19.4	SSE	*64	ESE	15	1	9	21	8.2	--
Cordova	40	1005.1	1006.8	39	26	32.3	5.7	47	9+	5	4	0	21	30	88	13.63	6.67	1.98	25	2	14.0	6	8.1	ESE	*46	ESE	7	3	4	24	8.6	--
Fairbanks	436	991.5	1009.3	16	-6	5.4	14.5	42	9	-25	4	0	31	-1	72	.23	-.27	.12	4	0	3.8	12	4.1	N	*17	ENE	[illegible]	10	4	17	6.2	
Juneau	17	1013.9	1014.7	38	30	33.9	6.3	48	7	10	20+	0	20	31	89	7.39	3.22	1.61	24	0	13.1	7	11.4	ESE	*40	ESE	23+	3	2	26	8.6	20
King Salmon	44	995.3	997.2	35	22	28.3	14.1	44	17	-4	12	0	26	25	83	1.62	.33	.33	16	0	14.8	7	13.7	E	*43	E	27	0	7	24	8.8	--
Kotzebue	10	1006.1	1006.5	19	5	12.0	15.7	36	9	-14	26+	0	31	6	75	.47	.12	.21	13	0	9.1	14	15.3	E	*37	ESE	8	4	3	24	8.1	--
McGrath	334	991.5	1004.9	16	-2	7.4	14.7	40	9	-26	4	0	31	2	76	.22	-1.03	.10	6	0	5.7	15	3.3	WNW	*17	ESE	7	3	6	22	8.0	
Nome	13	1000.3	1000.9	25	15	20.0	12.3	37	7	-1	25	0	31	15	79	1.02	-.14	.23	18	0	13.0	16	15.2	E	*38	ENE	15	1	4	26	8.9	14
Shemya	122	990.5	993.2	34	27	30.5	----	38	1	21	23	0	31	26	83	1.77	----	.46	20	0	10.7	4	19.6	WNW	*62	SE	1	0	11	20	8.2	
St. Paul Island	22	991.5	992.6	34	26	30.0	.7	39	16	15	7	0	27	28	87	1.68	-.31	.29	20	0	8.1	4	----	---	--	---	--	1	11	19	7.8	--
Yakutat	28	1009.8	1012.1	39	31	34.9	7.1	52	8	11	19	0	16	33	92	24.52	12.21	3.56	25	0	33.4	14	9.5	E	*40	SE	7	3	4	24	8.5	--
ARIZONA																																
Flagstaff	6993	------	------	42	15	28.7	.3	59	19	3	5	0	31	--	--	.39	-1.47	.20	5	0	5.3	4	----	---	--	---	--	14	6	11	5.0	--
Phoenix	1109	979.0	1019.3	64	37	50.5	-1.6	74	24	27	6	0	7	26	43	.07	-.90	.07	1	1	.0	0	5.2	E	*21	WSW	3	23	3	5	2.6	90
Prescott	5014	849.6	1021.5	52	23	37.4	-.4	65	19	8	7	0	30	20	55	.09	-1.28	.09	1	0	T	T	5.4	SSW	40	SW	2	19	8	4	3.2	87
Tucson	2584	928.5	1018.1	63	35	49.1	-2.9	80	1	20	7	0	8	23	43	.93	-.01	.81	3	1	.0	0	8.2	SE	34	SW	3	23	3	5	2.8	84
Winslow	4880	856.1	1026.8	32	16	24.2	-10.3	69	2	4	26	0	30	19	84	1.12	.59	.53	7	1	10.1	6	6.7	SW	*28	S	3	6	6	19	7.0	--
Yuma	199	1014.6	1019.9	70	43	56.1	-1.0	80	24	33	10+	0	0	26	37	.12	-.43	.11	2	0	.0	0	8.4	N	30	N	6	22	5	4	2.3	89
ARKANSAS																																
Fort Smith	458	1007.5	1025.1	49	29	38.7	-3.8	68	25	13	23	0	22	29	72	5.64	2.50	2.40	8	1	T	T	8.3	E	26	NW	20	8	7	16	6.5	47
Little Rock	257	1011.5	1025.5	47	28	37.6	-6.3	68	4	14	23	0	22	30	76	4.09	.01	1.02	9	0	6.0	1	8.3	WSW	26	NW	20+	11	2	18	6.2	39
Texarkana	361	------	1024.3	51	34	42.6	-5.4	68	4	20	21	0	14	35	78	7.47	2.63	2.03	9	2	T	0	7.7	NE	--	---	--	-	-	--	----	--
CALIFORNIA																																
Bakersfield	494	1005.4	1024.1	55	36	45.4	-3.3	76	1	27	29	0	7	39	79	T	-1.03	T	0	0	.0	0	4.5	E	*23	NNW	14+	9	4	18	6.5	--
Bishop	4108	879.4	1023.4	57	22	39.7	.6	69	21	15	29	0	31	--	--	.08	-.81	.08	1	0	.0	0	----	---	--	---	--	21	5	5	2.7	--
Blue Canyon	5280	842.2	1021.0	49	34	41.1	2.6	62	21+	22	6+	0	15	--	--	4.75	-4.00	2.76	7	0	8.7	10	9.8	ENE	51	ENE	27	17	2	12	4.5	--
Burbank	699	993.6	1020.0	70	44	56.7	2.0	80	23+	36	8	0	0	33	46	.14	-2.72	.14	2	0	.0	0	6.2	NW	*46	ENE	6	22	7	2	2.6	--
Eureka (U)	43	1020.0	1022.4	55	42	48.8	.2	62	6	35	6+	0	0	--	--	5.08	-1.01	2.06	11	0	.0	0	5.1	[illegible]	26	N	27+	10	8	13	6.0	38
Fresno	331	1011.2	1023.3	52	35	43.7	-2.6	64	1	25	31+	0	9	38	84	.07	-1.56	.05	2	0	.0	0	5.2	ESE	25	SW	1	9	4	18	6.5	51
Long Beach	34	1019.3	1020.5	68	40	53.6	----	84	22	31	7	0	1	38	61	.09	----	.09	2	0	.0	0	5.4	WNW	*31	ENE	6	20	10	1	2.7	
Los Angeles (U)	312	------	------	69	49	58.7	1.4	81	20	40	9	0	0	41	56	.15	-2.96	.15	2	0	.0	0	6.4	[illegible]	32	N	29	23	6	2	2.3	92
Los Angeles	99	1016.3	1020.0	65	44	54.9	-.7	82	20	38	9	0	0	39	59	.06	-2.55	.06	2	0	.0	0	5.3	WSW	*15	W	7	21	8	2	2.5	--
Mt. Shasta (R)	3544	898.1	1025.1	47	28	37.5	2.8	62	23	16	6	0	26	--	--	6.79	1.40	4.95	7	0	8.4	1	----	---	--	---	--	15	5	11	4.6	--
Oakland	3	1022.7	1022.9	56	41	48.4	-.2	64	20	32	7	0	1	39	73	.68	-2.74	.49	4	1	.0	0	7.1	E	*41	S	1	11	11	9	5.2	--
Point Arguello(R)	367	1006.8	1020.3	62	39	50.3	----	73	23+	31	29+	0	4	--	--	.93	----	.81	4	0	.0	0	6.7	---	*26	S	1	18	[illegible]	8	3.7	--
Red Bluff	341	1010.5	1023.8	54	39	46.4	-.4	65	8	30	31	0	5	35	72	4.48	.25	3.69	6	0	.0	0	10.0	N	35	SE	18	13	2	16	5.7	58
Sacramento	17	1022.4	1023.5	53	39	45.8	.0	64	17	29	8	0	6	41	86	.87	-2.14	.47	6	0	.0	0	5.5	NNW	28	SE	1	10	3	18	6.4	49
Sandberg (R)	4517	865.9	1021.0	51	37	44.1	1.7	65	18	21	6	0	9	--	--	.09	-2.76	.09	1	0	T	T	14.9	N	*43	NE	6	20	7	4	2.6	--
San Diego	19	1015.9	1019.3	67	46	56.3	-.6	81	20	35	9	0	0	41	63	.22	-2.35	.12	4	0	.0	0	4.7	NE	18	NW	29+	21	7	3	2.6	84
San Francisco (U)	52	------	------	56	46	51.4	-.5	65	17	40	31	0	0	--	--	2.31	-1.76	1.68	7	0	.0	0	6.3	ΦN	27	SE	1	--	--	--	----	58
San Francisco	8	1022.0	1022.9	56	42	48.8	-.5	63	15	33	7	0	0	42	78	1.16	-2.43	.73	5	0	.0	0	7.0	SE	44	S	1	10	8	13	5.5	--
Santa Maria	238	1012.2	1021.3	65	36	50.7	-1.7	77	20	27	7	0	7	39	71	.80	-1.81	.66	3	0	.0	0	5.0	WNW	*23	W	4	19	6	6	3.3	--
COLORADO																																
Alamosa	7536	772.4	1028.4	32	-2	14.6	-4.8	54	2	-18	31	0	31	--	--	.58	.41	.26	9	0	8.4	4	----	---	--	---	--	9	9	13	6.0	--
Colorado Springs	6173	812.4	1024.8	41	18	29.4	-2.1	65	2	7	6	0	31	15	63	.54	.23	.25	6	0	7.4	4	9.6	NNW	*36	NNW	19	12	5	14	5.4	--
Denver	5292	839.8	1024.3	39	14	26.5	-5.2	67	2	-7	6	0	31	16	65	1.50	.99	.57	7	0	17.8	9	8.0	SSW	36	NW	25	16	8	7	4.5	77
Grand Junction	4849	864.5	1026.2	41	19	30.0	1.5	53	1	11	7	0	31	18	63	.20	-.48	.12	3	0	1.1	1	7.3	ESE	24	NW	4	15	8	8	4.4	84
Pueblo	4639	859.8	1024.2	41	18	29.8	-1.3	70	2	[illegible]	29	0	31	20	73	.80	.37	.35	8	0	11.6	7	5.4	W	52	N	19	11	2	18	6.0	65
CONNECTICUT																																
Bridgeport	7	1020.5	1021.3	37	20	28.7	-3.6	59	5	7	28+	0	28	18	64	2.91	-.17	.98	7	0	10.6	8	11.1	WNW	35	NE	12	13	9	9	4.9	--
Hartford	169	1013.8	1019.9	33	12	22.7	-6.9	55	5	-5	28	0	30	13	68	2.53	-.76	1.06	6	0	17 6	13	8.6	NW	31	N	12	11	7	10	4.8	64
New Haven	[illegible]	1020.4	------	37	19	28.1	-3.8	57	5	5	28	0	29	--	--	2.95	-.99	.93	8	0	10.9	8	8.7	---	32	N	12	12	7	12	5.1	73
DELAWARE																																
Wilmington	78	1018.6	1022.0	38	19	28.4	-6.7	65	5	7	23+	0	29	17	66	2.67	-.32	1.15	6	0	13.2	10	9.4	WNW	40	NE	11	12	10	9	4.9	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	41	24	32.1	-6.1	69	5	8	23	0	28	--	--	2.58	-.17	1.37	5	-	----	--	----	---	--	---	--	-	--	--	----	--
Wash. Nat'l. AP	14	1018.7	1023.3	39	23	31.0	-7.0	67	5	10	23	0	28	16	57	2.43	-.18	1.36	6	0	8.7	9	8.8	NW	30	NW	13	14	7	10	4.8	67
FLORIDA																																
Apalachicola (U)	13	1021.8	------	59	42	50.7	-5.6	71	11	28	22	0	4	--	--	2.63	-.66	.87	7	0	.0	0	7.9	---	28	NE	[illegible]	9	14	8	5.1	77
Daytona Beach	31	1022.1	1023.9	65	43	54.1	-6.4	76	29+	26	18	0	6	45	75	1.24	-1.21	.93	4	0	.0	0	8.7	NW	*21	NNW	1	8	11	12	6.0	--
Fort Myers	15	1021.4	------	73	50	61.6	-4.0	84	10	35	22	0	0	--	--	.73	-.56	.35	3	0	.0	0	8.7	---	*31	SSW	15	9	13	9	4.9	
Jacksonville	24	1022.9	1024.4	62	38	50.2	-6.2	75	8+	24	14	0	10	38	69	1.51	-.86	.80	5	0	.0	0	7.4	NW	33	N	2	8	4	9	5.7	65
Key West	5	1019.8	1021.0	72	63	67.5	-4.3	80	11	51	22	0	0	59	74	.93	-.85	.33	8	0	.0	0	13.8	NE	30	NE	23+	9	12	10	5.6	67
Lakeland (U)	214	------	------	[illegible]	47	57.3	-5.2	81	10	30	22	0	2	--	--	1.40	-.60	.60	4	0	.0	0	8.1	---	--	---	--	11	8	12	5.3	71
Miami	7	1019.8	1021.0	74	57	65.5	-3.7	81	11+	39	22	0	0	54	68	.50	-1.15	.26	5	0	.0	0	9.8	NNW	32	SSW	15	7	13	11	6.0	--
Miami Beach	[illegible]	------	------	74	62	67.8	-3.1	83	10	39	22	0	0	--	--	.87	-1.03	.31	8	0	.0	0	----	---	¢30	¢N	¢2	¢9	¢12	¢10	¢5.4	¢67
Orlando	106	1018.7	1023.4	69	46	57.6	-5.1	82	10	31	22+	0	2	46	70	1.07	-1.02	.54	4	0	.0	0	8.6	NNE	*23	NW	15	10	12	9	5.3	--
Pensacola (U)	13	------	------	59	43	50.9	-4.2	72	7	25	22	0	7	--	--	2.60	-1.57	.84	10	0	.0	0	11.1	---	31	SW	31	-	-	--	-	57
Tallahassee	64	1021.7	1024.3	61	37	49.0	-5.1	73	11+	24	23	0	13	37	69	3.34	-.34	.81	6	0	.0	0	5.8	NNW	*18	NNW	21	9	10	12	5.3	--
Tampa	19	1021.9	1023.6	70	47	58.1	-4.6	82	10	32	23+	0	3	45	66	1.57	-.39	.72	4	1	.0	0	11.9	NNE	*29	NW	21	9	10	12	5.5	68
West Palm Beach	15	1020.4	1021.5	74	56	65.2	-3.5	83	30	37	22	0	0	54	70	.28	-1.92	.15	5	0	.0	0	12.2	NNW	*25	NE	2	7	7	17	6.5	-
GEORGIA																																
Athens	798	994.4	1024.5	52	28	39.8	-5.4	72	7	11	22	0	22	27	63	2.82	-1.90	1.14	9	0	T	0	7.6	W	*25	NW	12	13	8	10	5.0	
Atlanta	975	981.6	1025.1	51	30	40.7	-4.5	70	11	11	22	0	16	24	56	2.46	-2.09	1.05	8	0	T	0	11.9	NW	*35	NW	12+	10	8	13	5.7	56
Augusta	143	1017.2	1024.5	56	26	41.1	-6.4	77	7	13	3	0	24	26	63	2.24	-1.49	.70	6	0	T	0	5.3	WNW	*25	W	12	12	10	9	4.8	--
Columbus	385	1010.4	------	57	31	43.7	-3.9	72	11+	16	22	0	18	--	--	2.19	-2.38	.77	8	0	T	0	8.0	---	*28	WNW	11	10	8	13	5.6	--
Macon	356	1010.4	1024.7	56	31	43.5	-6.2	75	7	16	22	0	19	27	58	2.50	-1.74	1.15	8	0	T	T	8.2	NW	30	SW	11	10	10	11	5.3	70
Rome	637	1000.6	------	50	24	37.2	-6.1	68	6	8	22	0	26	--	--	4.20	-1.02	1.88	8	0	T	T	----	---	--	---	--	11	7	13	5.4	-
Savannah	48	1021.9	1024.8	59	32	45.2	-6.5	75	7	18	14	0	21	31	65	1.78	-.86	.49	5	0	.0	0	8.4	WNW	30	W	11	13	7	11	5.0	64
Thomasville	283	------	------	61	37	48.8	-5.8	75	6	21	22	0	13	--	--	2.10	-1.43	.52	9	0	.0	0	----	---	--	---	--	--	--			

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F	°F	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
HAWAII																																
Hilo	31	1013.9	1015.2	80	63	71.6	0.2	84	25+	58	9	0	0	63	77	4.12	-11.87	1.25	12	0	0.0	0	9.1	SW	*28	SE	25	11	12	8	5.1	48
Honolulu	7	1015.6	1016.1	82	67	74.4	.7	87	11	62	8+	0	0	64	73	2.24	-1.76	.83	7	1	.0	0	8.4	NE	40	W	18	10	12	9	5.4	61
Lihue	115	1010.5	1015.6	79	65	72.2	.7	84	26	59	6	0	0	64	79	8.49	3.14	5.40	18	0	.0	0	9.1	W	27	NE	12	5	13	13	6.4	41
IDAHO																																
Boise	2842	928.9	1028.9	39	22	30.5	-.5	57	1	11	6	0	30	25	81	.43	-.86	.24	6	0	1.1	1	4.6	SE	24	WNW	4	11	8	12	5.5	67
Idaho Falls 46W (R)	4933	854.0	1028.8	34	6	20.2	-.1	46	1	-8	6	0	31	--	--	.12	-.63	.06	6	0	2.3	1	3.6	N	a28	SW	19	--	--	--	----	--
Idaho Falls 42NW (R)	4790	------	------	33	4	18.2	.4	47	1	-11	15	0	31	--	--	.07	-.54	.05	3	--	----	--	3.9	N	a27	NW	4	--	--	--	----	--
Lewiston	1413	974.3	1027.8	37	26	31.6	-2.4	52	19+	15	8	0	28	--	--	.77	-.53	.22	9	0	2.4	1	----	---	--	---	--	3	5	23	8.3	--
Pocatello	4444	869.3	1028.9	36	15	25.4	-1.4	57	1	3	7+	0	30	19	79	.47	-.67	.22	7	0	1.6	1	7.8	SSW	34	SW	4	9	9	13	6.0	69
ILLINOIS																																
Cairo (U)	314	1011.2	------	41	27	34.2	-5.5	61	4	5	22	0	24	--	--	5.87	2.54	2.16	8	0	6.4	4	9.4	ΦS	30	NW	20	11	5	15	5.8	58
Chicago (O'Hare)	656	996.3	1022.3	32	15	23.5	----	61	5	-17	23	0	29	16	71	.46	----	.28	3	0	4.2	4	12.6	SSW	*36	SSW	5	10	11	10	5.4	--
Chicago (Midway)	610	998.6	1022.8	33	18	25.3	-2.7	60	5	-14	23	0	29	16	69	1.07	-.88	.69	9	0	14.0	12	13.3	SSW	26	NW	6+	10	9	12	5.5	53
Moline	589	999.7	1022.9	33	15	23.7	-3.2	63	4	-16	23	0	29	16	70	.88	-.69	.49	7	0	5.5	4	11.0	WSW	34	NW	15	11	8	12	5.5	69
Peoria	654	1000.3	1024.0	33	15	23.6	-5.0	64	5+	-12	23	0	29	16	73	.53	-1.51	.26	4	0	4.6	4	11.2	S	29	NW	15	11	7	13	5.4	61
Rockford	728	993.9	1022.7	31	13	21.9	-3.6	61	5	-20	23	0	29	14	72	.64	-1.00	.35	6	0	5.7	5	11.4	SW	*29	SW	5	12	8	11	5.0	--
Springfield	589	1000.0	1024.5	34	18	25.8	-4.8	64	5	-8	23	0	29	18	71	1.40	-.63	.42	5	0	9.0	6	14.7	SSW	39	S	5	14	2	15	5.4	55
INDIANA																																
Evansville	383	1008.1	1024.8	39	22	30.6	-6.3	60	4	-8	23	0	28	22	74	2.60	-.58	1.01	10	0	6.4	4	10.9	S	36	NW	20	12	4	15	5.7	55
Fort Wayne	801	990.2	1023.2	31	16	23.7	-5.1	53	5+	-13	23	0	29	17	74	.97	-1.29	.59	8	0	8.4	7	14.8	SSW	40	SW	26	8	9	14	6.2	54
Indianapolis	793	992.6	1024.0	33	16	24.6	-6.5	59	4	-10	23	0	29	18	76	1.88	-.91	.86	6	0	6.2	4	9.1	SSW	26	N	20+	9	10	12	6.1	60
South Bend	768	992.9	1022.1	32	18	24.8	-3.0	53	5+	-16	23	0	29	17	72	.87	-1.41	.38	11	0	14.4	9	12.1	SSW	*26	NNE	12	5	9	17	7.0	--
IOWA																																
Burlington	694	991.5	1024.0	36	17	26.2	-1.7	65	4	-7	23	0	29	17	68	.70	-.98	.40	7	0	4.3	3	12.9	SSW	36	NW	15	13	6	12	4.9	69
Des Moines	948	991.5	1024.4	35	17	25.9	-.3	60	4	-5	21	0	30	17	71	.45	-.69	.30	5	0	2.8	2	13.9	S	41	NW	16	14	8	9	4.7	70
Dubuque	1065	996.3	1022.8	29	12	20.3	-3.1	59	4	-18	23	0	30	12	68	1.26	-.09	.85	8	2	7.9	5	----	---	--	---	--	9	12	10	5.5	--
Sioux City	1094	980.4	1023.6	35	15	25.2	1.8	55	4	-3	21	0	30	16	71	.24	-.50	.10	6	1	1.4	1	12.1	NW	43	NW	15	15	4	12	5.0	66
Waterloo	870	989.5	1023.0	30	11	20.3	-2.8	60	4	-20	23	0	30	13	71	.71	-.46	.48	5	0	4.3	3	9.7	NW	*28	NW	15	10	11	10	5.6	--
KANSAS																																
Concordia (U)	1375	972.2	------	40	23	31.6	-.2	61	4	2	21	0	27	--	68	.93	.32	.80	7	0	2.3	1	8.2	ΦW	27	SW	2	20	4	7	3.7	71
Dodge City	2594	933.0	1024.2	42	24	32.8	-.6	62	25	9	22	0	27	24	74	.42	-.08	.28	8	0	3.0	3	15.6	N	56	N	11	10	9	12	5.6	63
Goodland	3645	891.6	1022.9	43	18	30.5	1.9	67	24+	0	22	0	30	21	73	.78	.31	.34	6	2	9.4	4	12.5	NNW	*40	WNW	4	12	8	11	5.1	--
Topeka	877	987.5	1024.8	41	21	31.0	-1.2	65	25	0	13	0	29	22	71	1.42	.26	1.22	4	0	5.6	4	13.1	WNW	40	N	20	13	10	8	4.4	69
Wichita	1321	973.6	1024.3	41	25	33.0	-2.5	65	25	12	21	0	28	26	78	1.73	.63	1.22	6	0	2.6	1	12.7	S	50	N	20	10	9	12	5.5	66
KENTUCKY																																
Lexington	979	987.3	1024.8	39	21	29.8	-6.1	67	5	-3	22	0	27	21	74	1.79	-1.89	.49	10	0	5.0	3	9.9	SSW	--	---	--	9	6	16	5.8	--
Louisville	474	1004.6	1024.7	39	21	29.9	-7.0	65	5	-9	22	0	28	21	71	2.88	-.42	.88	9	0	9.0	4	8.4	SSW	26	W	26	12	4	15	5.7	55
LOUISIANA																																
Alexandria	107	1020.0	1024.7	56	36	46.3	----	76	6	19	23	0	11	40	80	5.83	----	1.38	15	0	T	0	7.4	NE	--	---	--	7	5	19	6.9	--
Baton Rouge	64	1021.3	1024.5	59	39	48.6	-5.0	78	5	22	22+	0	12	41	80	4.71	-.54	1.38	11	2	T	0	10.2	SE	--	---	--	7	5	19	7.0	--
Lake Charles	12	1022.4	1023.7	59	43	50.9	-3.1	77	7+	26	2	0	5	44	81	7.83	2.07	2.33	13	3	T	T	4.2	NE	*27	WNW	31	5	5	21	7.5	--
New Orleans (U)	9	------	------	60	46	53.4	-3.7	79	6	30	22	0	1	--	76	4.24	-.34	1.20	11	1	T	0	7.2	---	24	SW	31	7	8	16	6.7	40
New Orleans	3	1021.7	1024.0	61	43	52.1	-4.0	79	6	25	23+	0	8	43	76	4.17	-.50	1.09	12	1	T	0	9.2	NE	*31	NW	31	8	3	20	6.8	--
Shreveport	252	1015.2	1024.9	53	36	44.6	-5.2	74	6	23	21	0	10	36	76	8.10	3.27	1.69	10	1	.0	0	10.5	SSE	--	---	--	6	5	20	7.2	51
MAINE																																
Caribou	624	990.9	1015.4	26	7	16.5	1.9	47	16	-16	28	0	31	10	74	3.19	.96	1.83	14	0	17.8	8	12.5	WSW	*46	WSW	17	2	9	20	8.0	--
Portland	61	1013.8	1017.9	34	11	22.2	-2.9	50	5	-6	28	0	31	14	73	3.71	-.08	1.33	8	0	23.1	15	9.7	WSW	42	N	12	16	6	9	4.3	67
MARYLAND																																
Baltimore (U)	14	------	------	40	24	32.0	-6.8	65	5	10	23+	0	25	--	--	2.72	-.23	1.45	5	0	----	--	----	---	--	---	--	--	--	--	----	--
Baltimore	146	1018.1	1023.1	39	18	28.4	-7.3	65	6	0	23	0	29	15	61	2.92	-.03	1.65	6	0	15.6	12	9.2	W	34	NE	12	15	8	8	4.5	53
Frederick	294	------	------	37	14	25.5	-9.5	66	5	-9	23	0	30	--	--	1.41	-1.51	.75	5	0	10.1	8	----	---	--	---	--	--	--	--	----	--
MASSACHUSETTS																																
Blue Hill Obs.(R)	629	993.2	------	34	18	25.9	----	54	6	2	28	0	29	--	63	5.44	1.54	2.08	9	--	27.1	21	16.8	SW	60	NE	12	--	--	--	----	67
Boston	15	1013.6	1018.5	37	22	29.5	-3.3	57	6	7	13	0	28	16	59	4.82	1.45	1.81	8	0	16.9	13	13.9	WNW	40	NE	12	14	11	6	4.1	71
Nantucket	43	1018.2	------	39	24	31.8	-3.4	53	7	12	13	0	29	23	70	6.07	2.27	2.10	10	0	21.9	16	13.6	---	51	NE	12	8	15	8	5.3	59
Pittsfield	1170	------	------	32	[illegible]	20.5	-4.3	57	6	-9	23	0	31	--	--	1.57	-1.48	.55	8	--	20.4	6	----	---	--	---	--	--	--	--	----	--
Worcester	986	979.8	1018.0	32	15	23.2	-4.2	54	6	0	28+	0	29	10	58	3.44	-.18	1.08	6	0	20.8	12	10.5	WSW	*32	NNE	12	14	11	6	4.5	--
MICHIGAN																																
Alpena	689	992.6	------	29	11	20.0	-4.7	54	5	-9	24	0	30	13	73	.96	-.97	.32	11	0	14.7	7	7.9	ΦSW	30	NE	12	2	7	22	8.0	40
Detroit(City AP)	619	993.9	1021.9	32	19	25.2	-4.3	55	5	-5	23	0	29	16	69	.44	-1.76	.19	9	0	4.5	3	13.9	SW	29	N	12+	6	10	15	7.0	46
Detroit (M. Wayne Co.)	630	997.0	1022.0	31	16	23.6	----	54	5	-9	23	0	29	15	69	.46	----	.24	7	0	4.9	4	13.5	SW	--	---	--	5	11	15	6.9	--
Detroit (Willow Run)	722	991.9	1021.6	32	16	23.8	-4.9	54	5	-11	23	0	29	15	70	.49	-1.55	.29	8	0	4.2	4	13.6	SW	*32	ENE	11	6	10	15	6.7	--
Escanaba (U)	852	995.6	------	26	13	19.5	-2.9	46	5	-7	23	0	29	--	69	.30	-1.13	.10	7	0	2.9	5	10.8	---	31	N	26	9	7	15	6.3	43
Flint	761	999.2	1021.6	30	13	21.7	-4.6	52	5	-10	24+	0	29	15	74	.49	-1.41	.14	11	0	5.4	2	11.1	SW	*25	SW	9	7	7	17	6.9	--
Grand Rapids	681	995.3	1021.6	31	17	23.8	-3.5	54	6+	-5	23	0	29	17	74	.81	-1.36	.30	11	0	13.5	8	11.4	SSW	32	SW	9	5	[illegible]	18	7.5	37
Lansing	856	987.8	1021.4	31	15	22.8	-4.3	53	5	-7	23	0	29	15	72	.37	-1.75	.11	11	0	4.1	3	14.2	SSW	36	SW	9	8	7	16	6.7	47
Marquette (U)	677	990.2	------	26	14	20.0	-3.1	52	5	-4	23	0	29	--	68	1.15	-.89	.47	14	0	21.5	10	9.2	ΦW	35	SW	5	3	[illegible]	19	7.6	40
Muskegon	627	997.0	1021.3	33	20	26.5	-2.7	56	4	-5	24	0	28	18	71	.91	-1.02	.19	14	0	22.0	8	10.5	W	*31	SW	9	3	5	23	8.2	--
Sault Ste. Marie	721	994.2	1018.3	25	9	16.8	-3.1	49	5	-12	23+	0	30	10	75	1.30	-1.00	.25	24	0	20.8	13	9.4	WSW	*23	WSW	9	6	3	22	7.6	33
MINNESOTA																																
Duluth	1409	976.6	1020.3	21	4	12.4	-.8	45	5	-17	23	0	31	4	69	.74	-.46	.46	8	0	7.4	11	13.6	NNW	34	N	15+	6	13	12	6.4	59
Intern'l Falls	1179	976.6	1020.8	16	-6	5.1	-4.0	44	5	-27	27	0	31	3	72	1.67	.82	1.25	11	0	9.4	10	7.6	SW	*22	NW	6	6	12	13	6.5	--
Minneapolis	830	986.5	1022.2	26	[illegible]	16.8	-2.6	51	5+	-12	23+	0	30	9	70	.55	-.30	.50	3	0	1.7	1	11.1	NW	30	NW	15+	6	11	14	6.6	59
Rochester	1017	971.6	1022.0	25	9	17.2	-1.8	50	4	-12	23+	0	30	13	81	.92	-.10	.84	5	0	2.0	1	12.8	NW	--	---	--	7	9	15	6.5	--
St. Cloud	1034	981.7	1022.0	25	6	15.5	.0	49	14	-12	23+	0	30	9	74	.55	-.14	.49	7	0	1.0	3	----	---	--	---	--	6	10	15	6.6	--
MISSISSIPPI																																
Jackson	305	1012.4	1025.0	55	34	44.5	-4.5	75	5	18	23	0	14	36	74	4.21	-1.39	1.16	13	0	T	T	6.2	SE	29	NW	20	8	6	17	6.5	42
Meridian	292	1010.7	1025.1	56	33	44.3	-3.9	75	5	16	17	0	14	36	78	3.84	-1.70	1.05	12	1	.0	0	7.5	NE	*23	NW	21+	9	5	17	6.3	--
Vicksburg (U)	234	1015.1	------	54	37	45.5	-5.0	74	4	24	22	0	11	--	--	4.84	-.54	1.42	14	0	T	T	8.8	---	29	NW	20	8	4	19	6.7	40
MISSOURI																																
Columbia	778	993.9	1023.5	40	22	31.1	-2.0	65	25+	2	22	0	28	22	71	1.69	-.38	1.05	7	0	6.0	4	11.5	S	34	NW	15	13	5	13	5.4	61
Kansas City	741	987.8	1024.4	40	23	31.1	-2.6	64	25	5	21	0	27	20	66	2.12	.62	1.45	6	1	6.1	5	10.5	SW	37	SW	4	11	13	7	4.5	76
St. Joseph	809	987.8	------	40	21	30.4	-.8	63	25	2	21	0	27	--	--	.49	-.90	.25	4	0	.5	T	14.0	S	*35	N	20	18	5	8	3.8	--
St. Louis (RFC)	465	------	------	41	27	33.8	-2.4	62	25+	6	22	0	26	--	--	2.24	-.19	1.37	6	--	4.8	3	----	---	--	---	--	--	--	--	----	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

DECEMBER 1960

State and station	Elevation (ground)	Pressure		Temperature								No. of days				Precipitation			No. of days		Snow, Sleet		Wind					No. of days (sunrise to sunset)				
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Fastest mile: Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
MISSOURI (Cont'd.)																																
St. Louis	552	1003.1	1024.6	39	23	30.9	-4.2	64	5	0	23	0	29	18	62	2.13	0.04	1.04	7	0	5.6	4	9.7	S	32	SE	5+	10	4	17	6.1	46
Springfield	1265	974.9	1024.5	42	23	32.3	-3.4	66	5	1	22	0	27	23	72	3.44	1.27	1.64	9	0	.6	1	12.7	SSE	39	SW	23+	9	7	15	6.0	52
MONTANA																																
Billings	3567	894.3	1022.6	39	21	30.3	3.1	55	2	3	20	0	29	14	55	.61	.03	.26	8	0	7.5	5	15.3	WSW	40	NW	19	12	6	13	5.5	66
Butte	5530	833.1	1028.8	33	7	19.8	1.3	45	1	-9	6	0	31	12	74	.33	-.28	.24	5	0	5.9	6	4.1	S	*40	NNE	14	9	8	14	6.1	--
Glasgow	2277	945.1	1020.8	27	8	17.4	1.6	49	13	-18	21	0	31	14	85	.34	-.19	.11	7	0	4.2	3	----	---	--	---	--	6	4	21	7.6	--
Great Falls	3664	891.6	1022.3	38	22	30.2	3.7	56	23	1	20	0	24	16	57	.19	-.51	.07	6	0	2.0	1	12.1	SW	32	SW	29	7	7	17	6.8	57
Havre (U)	2488	930.6	1023.7	31	12	21.2	.8	51	13	-11	22+	0	30	--	--	.33	-.23	.21	6	0	3.7	5	9.0	ΦSW	29	SW	29+	5	9	17	6.8	39
Helena	3893	878.1	1026.7	35	13	23.9	1.2	46	23+	-1	16	0	31	16	71	.34	-.30	.23	6	0	2.9	2	6.6	W	34	W	22	7	7	17	6.7	59
Kalispell	2965	------	------	27	16	21.5	-3.2	38	19	-5	6	0	31	--	--	.96	-.58	.46	12	0	17.5	8	----	---	--	---	--	2	3	26	8.9	--
Miles City	2629	935.7	1023.3	33	14	23.1	2.4	53	13	-20	22	0	31	17	79	.69	.18	.23	8	0	6.0	6	8.8	SSE	*38	NW	14	6	9	16	6.5	--
Missoula	3200	909.6	1030.0	26	10	18.3	-5.3	39	19+	-4	11+	0	31	17	90	.97	-.06	.29	11	0	11.7	9	3.3	ESE	26	N	14	6	2	23	7.7	31
NEBRASKA																																
Grand Island	1841	954.3	1023.4	40	17	28.2	1.2	59	4	-3	21	0	30	19	71	.12	-.43	.10	2	0	1.1	1	13.1	WSW	--	---	--	16	6	9	4.4	--
Lincoln (U)	1166	------	------	40	20	29.7	.6	58	3	-1	21	0	29	--	--	.08	-.78	.06	4	0	.7	1	10.8	ΦNW	43	SE	4	15	4	12	4.7	67
Norfolk	1544	964.4	1022.6	36	15	25.8	2.1	59	14	-4	21	0	30	17	68	.70	-.08	.50	4	1	2.2	2	----	---	--	---	--	13	8	10	5.0	--
North Platte	2779	919.7	1022.9	41	14	27.3	.1	61	24	-9	22	0	31	18	71	.49	.09	.25	5	0	4.4	4	11.3	NNW	36	N	25+	14	7	10	5.0	69
Omaha	978	982.1	1023.9	38	19	28.9	1.5	57	4	-2	21	0	30	19	68	.40	-.41	.32	4	0	1.1	1	12.4	SSE	41	NW	15	18	2	11	4.4	63
Omaha N.Omaha AP	1323	973.2	------	37	17	26.7	1.4	55	4	-5	21	0	29	--	--	.54	-.27	.44	5	0	1.0	1	----	---	--	---	--	18	2	11	4.7	--
Scottsbluff	3950	882.2	1024.6	35	10	22.6	-4.4	55	24+	-8	22	0	31	16	71	.52	.09	.30	4	0	7.0	2	11.4	NW	*38	NNW	19	13	7	11	5.1	--
Valentine	2587	927.9	------	35	12	23.5	-1.7	56	24	-12	21	0	31	--	80	.26	-.20	.13	3	0	2.6	3	10.2	ΦW	38	NW	25+	11	13	7	4.7	76
NEVADA																																
Elko	5075	850.3	1027.3	40	12	26.0	-.9	56	1	-4	6	0	31	18	72	.40	-.65	.21	3	0	5.2	2	4.1	E	*25	S	1	14	8	9	4.3	--
Ely	6257	812.4	1025.0	41	12	26.6	-.3	56	26+	1	29	0	31	13	59	.33	-.55	.32	3	0	4.9	3	9.7	S	50	SE	1	15	9	7	4.2	90
Las Vegas	2162	955.0	1022.2	55	33	44.3	-2.5	63	2	29	31+	0	11	25	52	.26	-.32	.23	3	0	T	0	8.3	WSW	*28	NNW	6	15	11	5	3.7	86
Reno	4404	867.6	1026.5	48	16	32.1	-1.1	62	18	9	31+	0	30	21	71	.24	-.70	.24	1	0	T	T	3.6	SW	40	S	1	16	3	12	4.5	82
Winnemucca	4299	874.7	1027.4	46	15	30.2	.2	59	18	4	30	0	29	21	70	.42	-.58	.26	4	0	T	T	5.0	NNE	26	S	18	13	9	9	4.6	67
NEW HAMPSHIRE																																
Concord	339	1009.3	1020.6	34	8	20.9	-3.1	55	5	-10	29+	0	30	10	66	2.47	-.34	1.10	6	0	23.1	12	6.4	NW	29	NW	16	16	6	9	4.4	70
Mt.Washington Obs.	6262	795.8	------	13	-5	4.4	-4.5	41	5	-24	27	0	31	--	87	5.02	-.83	1.83	14	0	28.1	5	42.1	W	‡107	W	17	6	7	18	7.2	37
NEW JERSEY																																
Atlantic City(U)	30	------	------	41	24	32.3	-5.9	60	5	11	24+	0	27	--	--	3.64	.33	1.75	7	0	----	--	13.9	---	50	N	12	--	--	--	----	--
Atlantic City	58	1019.7	1022.5	40	20	30.1	-6.6	65	6	6	23	0	28	19	67	3.46	.38	1.68	6	0	8.6	7	13.4	W	55	N	12	14	7	10	4.6	59
Newark	11	1020.3	1021.7	38	22	30.0	-4.0	65	6	8	13	0	28	17	59	3.89	.79	1.83	8	0	24.0	20	9.0	SW	*28	NNW	13+	12	8	11	5.2	--
Trenton (U)	56	1014.0	------	37	21	29.2	-5.8	62	6	9	24+	0	28	--	--	3.47	.69	1.66	10	0	21.5	17	8.8	---	34	NE	12	13	8	10	5.0	67
NEW MEXICO																																
Albuquerque	5310	852.0	1022.5	43	25	33.9	-2.1	57	3	15	11	0	28	20	60	.39	-.20	.21	6	1	2.5	2	7.6	N	66	E	6	14	7	10	4.6	71
Clayton	4969	847.6	1022.4	43	22	32.4	-2.7	71	2	8	9	0	30	--	--	1.10	.74	.37	6	1	9.0	6	----	---	--	---	--	12	5	14	5.9	--
Raton	6379	807.0	1023.0	40	14	26.8	-2.6	56	2	4	17	0	31	--	--	1.17	.82	.29	7	0	9.5	5	----	---	--	---	--	9	9	13	5.8	--
Roswell	3612	897.7	1022.0	40	19	29.3	-11.5	58	4	1	16	0	30	24	82	2.12	1.59	1.53	7	0	20.0	12	6.2	---	25	N	22	13	1	17	5.6	--
Silver City	5453	835.8	1019.7	49	25	36.6	----	63	25	13	11+	0	28	--	--	1.14	----	.59	4	1	8.7	6	----	---	--	---	--	17	4	10	4.2	--
NEW YORK																																
Albany	277	1016.4	1020.3	32	12	21.6	-4.8	53	6	-11	24	0	31	14	71	1.35	-.82	.47	6	0	16.6	8	8.5	S	34	NW	27	9	9	13	5.9	57
Binghamton	1590	958.2	1018.8	28	14	20.8	-4.6	58	6	-4	28+	0	29	13	72	.96	-1.64	.27	16	0	22.6	7	10.8	WSW	31	NW	13	5	5	21	7.3	43
Buffalo	693	991.3	1020.9	29	15	21.6	-7.4	58	5	-8	24	0	29	16	76	2.59	-.35	.94	21	0	32.1	18	12.4	SSW	36	SW	9	1	5	25	8.5	30
New York (U)	10	1019.7	------	38	24	30.7	-5.0	62	5	7	13	0	26	--	--	3.65	.58	1.46	8	2	21.2	17	14.5	---	57	NW	16	12	12	7	4.8	68
New York(Laguardia)	19	1019.4	1021.3	39	25	31.8	-3.9	64	6	8	13	0	26	18	58	3.19	.19	1.35	8	0	15.3	11	13.9	WNW	50	NW	16	14	7	10	5.2	--
Rochester	543	1000.6	1020.8	32	15	23.5	-4.7	64	5	-7	24	0	29	16	74	1.03	-1.37	.30	15	0	17.9	7	13.8	SSW	45	W	10	3	9	19	7.7	45
Schenectady	217	------	------	33	15	24.0	-1.8	53	6	-5	28	0	30	--	--	.91	-1.52	.33	8	--	14.8	8	----	---	--	---	--	19	7	5	3.6	--
Syracuse	424	997.2	1020.5	32	16	23.7	-5.4	64	6	-7	24	0	29	15	68	1.86	-.88	.46	19	0	27.8	10	12.1	WSW	38	NW	1	4	10	17	7.4	32
NORTH CAROLINA																																
Asheville (U)	2203	941.8	------	46	24	34.7	-5.5	66	5	4	22	0	25	--	--	1.49	-1.47	.99	5	0	.2	T	8.3	---	42	NW	12	13	7	11	4.9	62
Cape Hatteras(R)	7	1022.0	1022.6	52	34	42.7	-6.8	66	11	19	13	0	16	33	74	4.62	-.47	2.00	8	2	T	T	11.8	NNE	44	SW	11	13	7	11	4.7	70
Charlotte	725	994.8	1024.1	51	27	38.6	-4.4	72	6	11	22	0	24	23	58	2.99	-.80	1.42	8	0	.3	T	5.5	SW	22	NW	12	15	9	7	4.4	73
Greensboro	891	991.1	1024.5	47	23	34.8	-5.3	70	6	6	23	0	29	20	61	2.54	-.57	1.28	5	0	T	0	7.7	SW	28	NW	16	14	10	7	4.3	75
Raleigh	433	1009.5	1022.6	49	24	36.6	-5.8	74	6	11	23	0	28	19	55	1.92	-1.37	.93	5	1	.0	0	7.7	NW	*29	NW	12	17	7	7	3.7	76
Wilmington	30	1023.3	1023.4	54	29	41.6	-7.0	73	7	16	14	0	22	29	68	2.64	-.82	.80	6	0	.0	0	8.0	N	32	W	11	17	5	9	4.2	75
Winston-Salem	967	987.2	1023.9	47	25	36.2	-4.4	68	6+	10	23	0	28	18	52	2.55	-.68	1.38	5	0	T	0	8.5	NW	*30	NNW	13	14	9	8	4.4	--
NORTH DAKOTA																																
Bismarck	1650	959.0	1022.9	27	6	16.9	1.4	48	14	-19	8	0	31	9	69	.89	.49	.59	11	0	11.9	5	11.4	WNW	*46	NW	14	4	6	21	7.5	43
Devils Lake (U)	1471	964.8	------	21	-1	9.9	-1.3	38	14	-25	27+	0	31	--	80	1.21	.73	.86	10	0	14.6	12	8.0	ΦNW	31	NW	5	6	7	18	7.1	50
Fargo	895	985.8	1022.7	20	0	10.0	-2.9	38	14	-31	27	0	31	5	79	1.01	.41	.87	7	0	3.6	10	14.6	N	49	NE	15+	6	12	13	6.6	39
Williston (U)	1877	952.3	1022.6	27	11	19.1	3.4	45	13	-18	21	0	31	14	77	.45	-.09	.15	5	0	4.5	4	6.5	ΦW	24	NW	14	4	9	18	7.5	38
OHIO																																
Akron	1210	983.3	1023.2	30	14	21.9	-8.2	60	5	-8	22	0	29	16	76	1.27	-1.31	.64	15	0	25.4	13	12.2	SW	--	---	--	6	8	17	7.0	--
Cincinnati Obs.	761	------	------	37	21	28.9	-6.1	64	5	-1	22	0	28	--	--	2.32	-.52	.80	9	0	11.6	5	6.9	---	22	W	17	--	--	--	----	58
Cincinnati	869	990.8	1024.4	37	20	28.8	-4.8	62	5	-3	22	0	28	18	65	1.73	-1.10	.51	9	0	12.5	6	9.2	SSW	23	W	17	7	8	16	6.5	--
Cleveland	787	993.0	1022.3	31	15	22.9	-8.0	62	5	-7	23	0	28	17	75	1.09	-1.20	.51	13	0	14.1	9	13.6	S	*29	N	11	5	5	21	7.9	39
Columbus (U)	724	------	------	34	18	26.1	-7.2	64	5	-6	22	0	28	--	--	1.94	-.50	.80	7	0	18.7	9	----	---	--	---	--	--	--	--	----	--
Columbus	815	992.7	1024.2	34	16	25.1	-6.6	64	5	-7	13	0	29	17	70	1.62	-.87	.74	10	0	17.3	10	9.3	S	26	W	16	8	10	13	6.1	35
Dayton	1002	985.8	1022.7	33	16	24.4	-7.3	61	5	-8	23	0	28	16	70	1.76	-.71	.67	10	0	15.6	8	12.0	SSW	34	S	25	10	7	14	5.9	54
Mansfield	1296	------	------	31	15	22.9	----	62	5	-9	23	0	29	--	--	1.10	----	.58	12	0	12.6	9	----	---	--	---	--	6	9	16	6.7	--
Sandusky (U)	603	999.8	------	33	18	25.6	-5.9	63	5	-7	23	0	28	--	--	.93	-1.23	.72	7	0	6.8	6	10.9	---	38	N	11	6	11	14	6.5	49
Toledo	676	996.3	1023.0	30	14	21.9	-7.0	57	5	-11	23	0	28	17	79	.55	-1.74	.38	8	0	5.9	5	11.2	SW	23	SW	25+	7	9	15	6.6	59
Youngstown	1178	977.7	1022.5	30	15	22.3	-7.7	60	5	-5	22	0	28	15	71	1.01	-1.93	.41	16	0	17.7	9	11.9	SW	24	W	21	4	9	18	7.5	--
OKLAHOMA																																
Oklahoma City	1280	979.7	1024.9	45	29	37.4	-2.8	66	25	19	21	0	26	29	74	2.48	1.00	1.16	9	1	8.2	3	12.5	N	46	SW	25	8	9	14	6.5	55
Tulsa	672	999.3	1024.7	48	29	38.5	-2.3	70	25	16	13	0	22	27	66	3.01	1.32	1.74	10	1	1.0	1	10.5	NNE	36	N	20	8	9	14	6.2	54
OREGON																																
Astoria	8	1022.0	1022.7	50	37	43.5	.8	58	12	30	23+	0	6	38	82	6.12	-7.09	1.54	18	0	.0	0	10.2	ESE	*52	SSW	18	0	5	26	8.6	--
Burns (U)	4140	879.4	1027.2	39	18	28.4	.7	47	23	7	6	0	31	22	77	.81	-.63	.45	7	0	3.0	3	----	---	--	---	--	11	7	13	5.5	--
Eugene	361	1010.2	1024.4	45	33	38.9	-1.7	61	12	22	9+	0	15	--	--	3.21	-2.79	1.20	14	0	.0	0	5.6	---	*37	SW	18	3	4	24	8.4	--
Meacham	4050	------	------	36	24	29.8	.7	47	23+	10	6	0	28	--	--	3.08	-1.30	.99	11	0	21.5	14	----	---	--	---	--	5	9	17	7.0	--
Medford	1312	976.0	1025.2	46	29	37.7	-.8	58	18+	21	31+	0	24	33	88	1.71	-1.42	1.25	7	0	T	T	3.2	SE	*23	SE	15	5	5	21	7.7	--
Pendleton	1492	971.9	1027.6	35	26	30.6	-4.7	54	1	19	8	0	28	27	88	.63	-1.06	.20	9	0	.4	T	6.3	NW	*36	WSW	19	3	1	27	8.7	--
Portland	21	1018.6	1024.3	45	33	38.7	-2.1	54	18+	23	29+	0	13	34	83	2.61	-3.56	.95	15	0	.0	0	10.1	E	40	SE	7	3	4	24	8.3	31
Roseburg	505	1005.1	1024.0	47	35	40.8	-.4	63	12	26	8	0	12	--	--	2.26	-2.67	.78	14	0	.5	T	3.1	ΦN	17	SW	18	1	3	27	9.0	21
Salem	195	1016.9	1024.5	47	33	40.1	-.9	63	12	23	9	0	16	35	82	3.24	-3.88	1.04	17	0	T	0	4.9	S	*25	S	18	3	[illegible]	24	8.1	--
Sexton Summit(R)	3836	887.9	1023.0	46	35	40.6	3.9	60	23	25	5	0	13	--	--	3.90	-.80	1.22	11	0	1.8	1	14.2	ESE	--	---	--	12	2	17	5.7	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days				Total	Departure from normal	Greatest in 24 hours	No. of days		Snow, Sleet		Average hourly speed	Prevailing direction	Fastest mile			Clear	Partly cloudy	Cloudy		
												Max. 90° F. or above	Min. 32° F. or below						.01 inch or more	With thunderstorms	Total	Max. depth on ground			Speed	Direction	Date					
	Ft.	Mb.	Mb.	°F.	°F	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
PACIFIC AREA																																
Canton Island	8	1008.1	1008.5	90	79	84.5	1.5	92	25+	75	31	20	0	72	71	0.66	-0.29	0.97	3	0	0.0	0	12.9	E	*22	ENE	1	0	0	31	10.0	--
Eniwetok	13	1009.8	1010.5	87	78	82.2	----	88	4+	74	15	0	0	75	78	3.43	----	1.43	17	0	.0	0	19.2	---	--	---	--	--	--	--	----	--
Guam (R)	361	------	-----	85	73	79.1	1.0	87	2	66	25	0	0	--	--	6.23	1.32	1.14	23	2	.0	0	7.8	ΦE	29	ΦE	12	--	--	--	----	31
Johnston Is.	7	1011.9	1012.5	82	74	77.9	----	85	4	70	27+	0	0	69	74	3.12	----	2.32	12	0	.0	0	13.5	---	31	NE	30	10	17	4	4.9	46
Koror (R)	94	1005.8	1009.6	88	76	81.6	.8	90	21+	73	26+	2	0	76	85	14.11	.58	3.23	27	2	.0	0	7.1	E	31	SW	1	0	0	31	9.8	65
Kwajalein	8	1008.8	1009.7	86	78	82.1	----	87	31+	75	18+	0	0	75	79	3.67	----	1.69	15	0	.0	0	16.6	ENE	*26	ENE	27	2	12	17	7.2	--
Ponape (R)	123	1003.7	1009.0	87	75	80.8	-.1	89	23+	71	21	0	0	76	84	20.85	3.66	3.38	26	7	.0	0	5.4	NE	24	E	26+	0	0	31	9.4	46
Truk, Moen Is.	5	1008.8	1009.1	86	77	81.1	.0	88	18	74	25+	0	0	76	84	18.10	5.95	4.70	23	3	.0	0	6.2	NNE	27	SE	10	0	5	26	9.2	49
Wake Island	11	1015.2	1015.6	84	76	80.0	1.0	85	28+	73	15+	0	0	71	76	.65	-1.42	.40	10	0	.0	0	15.7	ENE	*29	E	15	14	15	2	4.0	--
Yap (R)	55	1007.1	1009.1	86	76	80.6	-.6	88	22+	71	1	0	0	76	85	8.13	-2.02	2.55	20	2	.0	0	6.7	NE	72	SW	1	0	4	27	9.4	19
PENNSYLVANIA																																
Allentown	376	1007.4	1022.3	34	14	24.2	-6.9	62	6	-3	23	0	29	15	70	2.59	-.43	1.17	9	0	16.3	10	10.3	SW	46	WNW	12	10	11	10	5.3	--
Erie	732	994.0	1021.4	32	19	25.5	-5.2	62	5	-1	23	0	28	16	68	1.38	-1.01	.37	16	0	17.4	11	16.9	SSW	*32	S	25	1	9	21	8.2	--
Harrisburg	335	1008.4	1023.0	36	15	25.6	-8.3	65	5	-8	23	0	28	13	60	2.41	-.15	1.16	7	0	22.1	11	7.8	WNW	*27	NW	1	9	11	11	5.5	70
Philadelphia (U)	35	------	------	40	25	32.5	-4.9	65	6	9	13	0	25	--	--	----	----	----	--	--	----	--	----	---	--	---	--	--	--	--	----	--
Philadelphia	7	1017.3	1022.0	37	18	27.6	-8.3	62	6	7	15	0	29	16	64	3.16	.49	1.42	9	0	17.5	12	9.4	WNW	42	NE	12	12	9	10	5.1	64
Pittsburgh (U)	749	------	------	36	21	28.2	-7.0	64	5	3	22	0	29	--	--	1.58	-.99	.69	11	--	16.3	--	----	---	--	---	--	--	--	--	----	24
Pittsburgh	1151	991.7	1023.4	32	15	23.4	-7.5	63	5	-3	23	0	29	15	69	1.64	-.87	.68	16	0	20.8	9	10.3	SW	23	NNW	12	5	8	18	7.5	55
Reading (U)	266	1009.1	------	37	19	28.0	-6.8	65	5	3	23	0	28	--	--	2.31	-.49	1.03	7	0	11.5	7	9.7	---	*49	NW	13	8	10	13	5.8	58
Scranton	940	986.0	1022.1	30	14	21.9	-7.7	56	5	-4	28+	0	29	11	63	1.01	-1.36	.43	8	0	19.0	10	9.3	SW	26	NW	1	8	9	14	6.1	52
Williamsport	527	1002.8	1023.0	33	12	22.1	-8.8	61	5	-11	23	0	29	12	66	1.80	-.87	.70	11	0	19.7	11	7.3	W	*21	WSW	23+	8	8	15	6.3	--
RHODE ISLAND																																
Block Island	110	1011.1	------	39	25	31.7	-3.4	54	6+	10	13	0	25	--	--	6.37	3.01	2.65	10	0	7.0	5	----	---	--	---	--	11	12	8	4.8	--
Providence	55	1013.4	1019.8	37	18	27.4	-4.2	54	5	5	14	0	30	16	62	4.30	.85	1.42	10	0	14.1	11	10.8	NNW	*42	N	12	16	7	8	4.0	72
SOUTH CAROLINA																																
Charleston (U)	9	------	------	55	38	46.5	-5.7	73	7	25	22+	0	9	--	--	2.09	-.62	.67	5	--	.0	0	9.8	---	33	SW	11	--	--	--	----	--
Charleston	41	1022.5	1024.4	58	30	43.7	-6.8	75	7	17	14+	0	19	29	64	2.13	-.58	.72	5	0	.0	0	8.5	NNW	42	S	31+	13	9	9	4.6	80
Columbia	217	1011.1	1024.5	55	27	41.3	-5.7	75	6	16	14+	0	23	26	62	2.37	-1.22	.85	5	0	T	T	5.1	WSW	23	WNW	11	17	6	8	4.3	74
Florence	146	1017.4	1023.4	54	28	41.0	-5.5	74	6	15	14	0	24	24	58	2.10	-1.15	.95	5	1	.0	0	7.1	N	*22	NNW	13	16	8	7	3.9	--
Greenville	1018	985.4	1024.0	51	28	39.6	-4.5	74	6	11	22	0	20	22	57	3.26	-1.25	1.78	6	0	T	T	7.0	SW	27	N	12	13	8	10	4.8	69
Spartanburg	801	992.7	1023.8	50	27	38.5	-5.4	70	7+	13	22	0	23	22	57	3.14	-.85	1.62	7	0	T	T	6.2	SW	*28	WNW	21	14	8	9	4.8	--
SOUTH DAKOTA																																
Huron	1282	973.6	1023.4	25	6	15.6	-4.0	38	14	-20	21	0	31	13	88	.95	.50	.51	6	1	7.0	7	12.8	NW	47	NW	5	8	4	19	6.6	59
Rapid City	3165	904.2	1023.1	35	15	25.0	-.7	69	2	-6	22	0	31	17	74	.80	.46	.50	7	0	7.1	3	9.9	NNW	43	NW	23	8	7	16	6.5	41
Sioux Falls	1420	968.5	1022.6	31	11	21.0	1.6	52	14	-13	21	0	29	12	69	.77	.10	.40	6	2	6.4	5	10.5	SW	*30	NW	15	11	9	11	5.6	--
TENNESSEE																																
Bristol	1519	967.8	1024.4	43	22	32.5	-6.2	63	5	3	22	0	27	22	70	2.46	-.97	1.03	11	0	.8	T	6.1	NE	*25	NW	12	8	8	15	6.3	--
Chattanooga	670	996.3	1025.2	47	26	36.4	-5.7	62	6	9	22	0	22	26	72	4.19	-1.12	1.33	7	0	T	T	5.6	NNE	34	NE	12	11	6	14	6.0	53
Knoxville	950	988.3	1025.2	45	26	35.2	-5.8	58	7	7	22	0	26	24	67	3.61	-.65	1.38	9	1	2.0	2	7.3	NE	32	SW	21	9	8	14	6.1	49
Memphis (U)	271	------	------	45	31	38.3	-6.1	66	4	13	22	0	16	--	--	4.46	-.33	1.14	10	--	2.0	1	----	---	--	---	--	--	--	--	----	--
Memphis	263	1009.9	1025.3	46	28	37.2	-6.1	66	4	12	22	0	22	28	71	4.30	-.79	1.10	11	0	1.2	1	10.5	NNE	31	N	20	11	4	16	6.0	51
Nashville	577	1004.0	1024.9	45	24	34.7	-6.9	65	5	5	22	0	27	25	70	3.62	-.44	1.08	8	0	.2	T	7.9	S	31	NW	20	10	5	16	6.0	47
Oak Ridge	905	989.4	------	44	25	34.6	-5.0	57	5	6	22	0	24	--	--	4.56	-1.10	1.80	10	1	2.4	1	3.4	---	*27	---	12	9	8	14	5.7	--
TEXAS																																
Abilene	1759	960.4	1023.5	50	31	40.9	-4.9	68	24+	19	21	0	19	32	74	2.83	1.46	.96	8	1	T	T	9.7	N	33	N	20	9	6	16	6.5	50
Amarillo	3590	893.0	1022.5	45	25	34.9	-2.4	66	19	17	17	0	29	24	69	.65	-.02	.26	8	0	3.6	3	13.5	SW	43	SW	4	13	3	15	5.7	61
Austin	615	1001.0	1023.5	57	40	48.5	-3.7	75	6+	27	22+	0	4	41	80	4.08	1.37	1.26	9	1	.0	0	9.9	N	29	N	20	9	5	17	6.6	44
Brownsville	16	1019.6	1022.1	66	51	58.6	-3.8	82	5	37	21	0	0	53	85	2.65	.49	.85	13	0	.0	0	9.8	NNW	26	SE	3	3	7	21	7.9	34
Corpus Christi	41	1021.7	1022.8	63	48	55.3	-3.5	82	6	33	21	0	0	49	83	7.80	5.53	3.86	13	1	.0	0	11.3	N	31	S	4	4	8	19	7.5	38
Dallas	487	1005.4	1024.8	52	36	44.3	-4.0	73	5	25	21	0	10	34	71	8.50	5.88	3.36	10	1	T	0	10.9	N	37	NW	20	7	4	20	6.8	46
Del Rio (U)	957	------	------	58	40	48.6	-4.6	70	4	29	21	0	4	--	--	1.81	.93	.66	11	0	.0	0	----	---	--	---	--	--	--	--	----	--
El Paso	3920	890.3	1022.0	50	28	38.8	-6.0	66	1	19	11	0	27	26	64	1.73	1.24	.93	8	1	10.1	6	9.3	N	34	W	3	14	6	11	4.7	74
Fort Worth	544	1003.1	1024.7	52	35	43.7	-4.4	75	5	21	21	0	12	35	76	4.22	1.74	1.80	12	2	T	0	12.6	NNE	*35	NNW	20	8	3	20	6.8	--
Galveston (U)	7	------	------	59	48	53.4	-3.6	74	6	31	21	0	1	--	--	5.37	1.11	1.05	15	--	.0	0	12.7	---	34	NW	31	--	--	--	----	41
Galveston	5	1021.0	1023.5	39	48	53.3	-3.2	76	6	32	21	0	1	46	78	6.73	1.91	1.72	16	2	.0	0	11.1	E	--	---	--	6	5	20	7.2	--
Houston (U)	41	1018.0	------	60	45	52.3	-3.5	79	6	30	21	0	2	--	--	6.73	2.10	1.57	15	1	.0	0	9.8	ΦNE	40	S	4	7	6	18	7.2	45
Houston	50	1021.0	1024.0	61	45	52.8	-2.4	80	6	30	21	0	2	47	84	8.97	4.51	2.22	15	1	T	0	9.4	ENE	--	---	--	7	3	21	7.5	--
Laredo	500	1007.1	1022.9	61	45	53.0	-6.3	80	6	33	22	0	0	45	78	4.65	3.21	2.10	16	0	.0	0	7.6	ENE	*29	NW	6+	5	6	20	7.5	--
Lubbock	3243	908.6	1023.7	47	27	36.6	-4.0	68	25	20	22+	0	28	27	72	1.25	.59	.58	10	0	9.9	5	13.8	NNE	*42	WSW	4	12	6	13	5.5	--
Midland	2854	920.8	1022.1	50	30	40.4	-5.0	68	5	21	22	0	24	30	73	1.88	1.13	.93	9	2	4.8	2	10.5	NNE	*37	SSE	3	11	6	14	5.8	--
Port Arthur	16	1021.7	1023.3	59	43	51.0	-3.1	77	6	29	22+	0	3	46	84	7.37	1.90	1.87	16	3	.0	0	10.8	E	38	NW	20+	7	4	20	7.2	37
San Angelo	1903	954.3	1023.3	54	33	43.4	-5.4	71	19+	20	21	0	18	35	74	1.61	.48	.46	9	0	.3	T	11.9	N	*37	N	20	9	6	16	6.2	--
San Antonio	792	997.6	1023.2	59	41	50.1	-3.0	76	6+	27	21	0	4	43	79	2.97	1.05	1.46	11	0	T	0	10.3	N	30	N	20	9	5	17	6.6	39
Victoria	110	1018.0	1022.9	61	44	52.4	-4.4	80	6	29	22	0	3	46	78	4.18	1.11	1.18	12	0	T	0	11.5	N	‡44	NW	20	8	4	19	7.1	--
Waco	500	1002.7	1024.3	55	37	46.0	-4.2	74	5	23	21	0	6	39	79	7.03	4.29	2.74	13	2	T	0	13.5	N	*44	NNW	20	7	7	17	6.8	--
Wichita Falls	1020	985.4	1024.2	48	31	39.5	-4.3	71	4	20	21	0	20	31	75	3.80	2.33	1.44	11	2	3.4	1	11.4	N	*40	NNW	20	7	4	20	6.8	--
UTAH																																
Milford	5028	848.6	1027.1	42	15	28.6	.6	59	26	4	30	0	31	--	--	.26	-.49	.16	3	0	3.0	1	----	---	--	---	--	17	6	8	4.1	--
Salt Lake City	4220	874.0	1027.2	39	20	29.6	-1.9	56	1	9	7	0	29	23	76	.39	-.95	.17	6	0	4.5	2	6.5	SSE	29	S	2	15	16	10	4.7	70
Wendover	4237	877.1	1026.1	38	19	28.7	----	54	19	10	31	0	31	--	--	.04	----	.02	2	0	T	T	----	---	--	---	--	14	11	6	4.0	--
VERMONT																																
Burlington	331	1003.3	1018.8	28	11	19.7	-3.1	53	6	-16	28	0	30	11	66	.62	-1.26	.35	12	0	9.1	6	10.1	SSW	28	SW	15	2	11	18	7.5	49
VIRGINIA																																
Lynchburg	947	988.2	------	43	23	33.0	-5.9	70	6	9	23	0	27	--	--	1.77	-1.38	.76	6	0	1.2	1	7.3	---	24	NW	21	15	6	10	4.5	62
Norfolk	26	1022.4	1023.7	47	26	36.5	-6.3	68	6+	15	24+	0	27	24	64	2.37	-.51	1.63	7	1	.7	T	10.0	SW	48	NW	11	16	6	9	4.5	72
Richmond	162	1017.5	1024.0	47	23	34.6	-4.9	73	5	10	13	0	31	20	61	3.04	.15	2.03	6	1	1.7	[illegible]	6.2	SW	38	NW	12	15	6	10	4.5	65
Roanoke	1174	980.2	1023.8	42	23	32.4	-6.6	68	6	6	22	0	28	16	54	2.23	-.90	.99	7	0	9.8	4	9.9	NW	--	---	--	13	12	6	4.5	--
WASHINGTON																																
Olympia	190	1015.9	1023.6	45	31	37.8	-1.6	57	12	19	15	0	19	36	92	3.89	-4.77	1.28	15	0	.0	0	5.2	SW	*24	SW	18	1	3	27	9.0	--
Seattle (U)	14	------	------	48	39	43.0	-.1	58	12	31	8	0	3	--	--	3.21	-2.13	1.23	14	--	.0	0	----	---	37	SW	18	--	--	--	----	32
Seattle	14	1022.7	1023.4	--	--	----	----	--	--	--	--	--	--	36	84	----	----	----	--	--	----	--	6.0	SSE	--	--	--	--	--	--	----	--
Seattle-Tacoma	386	1009.5	1023.9	45	34	39.5	-.3	60	12	25	8+	0	14	35	83	3.75	-1.93	1.23	17	0	.0	0	8.1	N	*29	S	18	2	4	25	8.5	--
Spokane	2357	955.6	1027.2	32	22	26.6	-2.5	46	12	10	10	0	29	23	87	1.37	-.84	.64	11	0	8.6	4	5.7	NE	34	SW	19	5	3	23	7.9	32
Stampede Pass(R)	3958	883.5	1026.2	30	20	25.0	-1.2	42	21	11	29	0	31	--	--	6.80	-7.86	1.43	16	0	57.8	68	----	---	--	---	--	2	5	24	8.5	--
Tatoosh Island(R)	101	1017.3	1021.9	49	42	45.1	1.0	54	12	38	31+	0	0	38	78	8.32	-3.72	2.12	17	0	.0	0	20.9	E	72	E	14	2	4	25	8.5	39
Walla Walla (U)	949	990.2	1027.4	35	28	31.3	-5.0	51	3	20	7	0	27	--	--	.88	-.93	.36	8	0	2.3	1	3.1	ΦW	18	W	3	2	2	27	9.0	15
Yakima	1061	988.2	1028.8	34	21	27.3	-3.3	49	3	13	[illegible]	0	31	24	89	.90	-.20	.42	11	0	3.8	2	3.8	WNW	*32	WNW	3	2	5	24	8.4	--
WEST INDIES																																
San Juan, P.R. (U)	47	------	------	82	72	76.9	.4	88	2	69	27+	0	0	--	--	6.94	2.11	1.14	22	--	.0	0	----	---	--	---	--	--	--	--	----	--
San Juan, P.R.	15	1013.0	1015.9	83	70	76.5	.7	86	13+	67	18+	0	0	68	78	8.01	2.02	1.73	24	0	.0	0	10.9	ENE	35	NE	4	2	16	13	6.7	48
Swan Island	33	1014.4	------	83	74	78.2	-.2	86	12	67	23	0	0	--	--	7.71	3.11	3.45	15	2	.0	0	----	---	--	---	--	7	15	9	5.5	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature								No. of days				Precipitation			No. of days		Snow, Sleet		Wind					No. of days (sunrise to sunset)				
		Ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Fastest mile Speed	Fastest mile Direction	Fastest mile Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F	°F	°F.	°F.	°F		°F				°F	%	In.	In.	In.			In.	In.	M p. h.		M. p h.			0–3	4–7	8–10	0–10	%
WEST VIRGINIA																																
Charleston	950	987.4	1024.4	40	20	30.1	-8.0	70	5	2	22	0	28	21	71	2.17	-0.81	1.06	13	0	4.1	2	6.1	SW	*29	NW	21	7	9	15	6.7	--
Huntington (U)	567	------	------	41	21	31.2	-7.9	70	5	2	22	0	27	--	--	2.32	-.85	.60	11	--	1.8	1	----	---	--	---	--	--	--	--	----	--
Parkersburg (U)	615	------	------	39	19	29.1	-7.0	69	5	2	22+	0	29	--	--	2.31	-.59	1.10	11	0	6.2	3	6.7	---	24	W	21	9	8	14	6.0	44
WISCONSIN																																
Green Bay	689	997.3	1021.2	27	12	19.4	-.7	55	5	-8	23	0	30	12	73	.10	-1.16	.05	4	0	.7	T	14.3	SW	42	SW	9	8	11	12	6.0	49
La Crosse	652	996.3	1022.3	30	13	21.5	1.0	57	4	-9	23	0	29	13	69	.41	-.81	.31	6	0	1.4	1	11.4	S	*31	SSW	5	8	7	16	6.4	--
Madison	857	984.8	1022.0	30	11	20.8	-2.2	60	5	-11	23	0	30	11	66	.25	-1.15	.15	3	0	.6	1	11.4	SW	29	SW	9	8	15	8	5.6	68
Milwaukee	672	996.3	1022.5	31	14	22.5	-3.2	60	5	-9	23	0	29	15	72	.35	-1.13	.25	5	0	2.3	2	13.5	SW	31	S	5	12	10	9	5.3	70
WYOMING																																
Casper	5319	839.5	1023.2	36	15	25.6	.1	55	2	-3	6	0	29	16	69	.47	-.18	.27	8	0	8.4	5	15.3	SW	*37	SW	2	11	9	11	5.3	--
Cheyenne	6131	812.1	1022.8	38	16	26.8	-1.9	62	2	3	6	0	30	14	60	.28	-.24	.19	5	0	5.2	4	15.5	WNW	50	NW	25	14	5	12	4.8	66
Lander	5563	838.1	1025.9	32	8	20.2	-.2	53	2	-5	28	0	31	10	68	.38	-.11	.27	4	0	9.9	6	4.2	ESE	38	W	19	16	10	5	3.8	80
Sheridan	3942	887.9	1023.4	38	14	26.2	2.2	60	13	-5	22+	0	31	18	75	.57	-.10	.36	8	0	14.1	8	6.3	S	50	NW	25	10	9	12	5.5	63

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.
a Maximum hourly average.
+ And also on an earlier date or dates.
Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.
# Number of days maximum 70° or above for Alaskan Stations.
ȿ Sun continuously below horizon.

₵ Wind direction to 8 compass points only.
¢ City Office Data.
† Airport Data.
‡ Peak Gust.

HEATING DEGREE DAYS

(Base 65°F.)

DECEMBER 1960

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	723	1168	1130
Huntsville	815	1340	
Mobile	482	688	623
Montgomery	655	1008	864
ALASKA			
Anchorage	1226	4405	4807
Annette	769	2818	3022
Barrow	2261	9163	8392
Barter Island	2089	8506	
Bethel	1413	5357	5559
Cold Bay	976	4039	4150
Cordova	1011	4044	4190
Fairbanks	1846	6138	6374
Juneau	956	3673	3966
King Salmon	1128	4598	4927
Kotzebue	1638	6239	6630
McGrath	1786	6136	6378
Nome	1386	5658	5967
St. Paul	1078	4714	4556
Shemya	1060	4225	
Yakutat	925	3763	4071
ARIZONA			
Flagstaff	1116	2786	2967
Phoenix (U)	346	461	555
Phoenix	445	614	645
Prescott	848	1692	1720
Tucson	486	706	649
Winslow	1261	2155	1903
Yuma	269	328	364
ARKANSAS			
Ft. Smith	809	1307	1273
Little Rock	841	1375	1179
Texarkana	686	1034	913
CALIFORNIA			
Bakersfield	600	993	819
Bishop	775	1651	1675
Blue Canyon	734	1863	2006
Burbank	253	481	580
Eureka (U)	496	2176	2033
Fresno	656	1146	1011
Long Beach	344	565	
Los Angeles (U)	194	351	451
Los Angeles	306	564	697
Mt. Shasta (R)	846	2105	2326
Oakland	508	1191	1238
Point Arguello (R)	449	1669	
Red Bluff	570	1000	942
Sacramento (U)	572	996	980
Sacramento	591	975	1072
Sandberg (R)	643	1449	1403
San Diego	261	415	496
San Francisco (U)	415	1427	1247
San Francisco	498	1228	1360
San Jose (U)	449	827	861
Santa Maria	433	1295	1113
COLORADO			
Alamosa	1554	3526	3621
Colorado Springs	1095	2478	2391
Denver	1187	2452	2364
Grand Junction	1077	2132	2293
Pueblo	1087	2143	2279
CONNECTICUT			
Bridgeport	1119	2020	2059
Hartford	1308	2546	2280
Middletown	1267	2522	
New Haven	1138	2184	2163
DELAWARE			
Wilmington	1130	2010	1841
DISTRICT OF COLUMBIA			
Washington (U)	1014	1688	1604
Washington	1048	1756	1630
FLORIDA			
Apalachicola (U)	436	528	475
Daytona Beach	336	358	288
Fort Myers	148	151	126
Jacksonville	454	521	473
Key West	33	33	18
Lakeland (U)	263	281	227
Miami	63	63	60
Miami Beach	39	39	37
Orlando	250	264	222
Pensacola (U)	430	568	529
Tallahassee	493	638	606
Tampa	240	256	223
West Palm Beach	85	85	63
GEORGIA			
Athens	774	1269	1109
Atlanta	744	1185	1125
Augusta	733	1121	835
Columbus	655	1004	951
Macon	660	1000	824
Rome	855	1485	1256
Savannah	607	834	675
Thomasville (U)	496	638	569
IDAHO			
Boise	1063	2297	2340
Idaho Falls 46W (R)	1381	3374	3463
IDAHO (Cont'd.)			
Idaho Falls 42NW (R)	1440	3520	3605
Lewiston	1028	2290	2247
Pocatello	1221	2759	2727
ILLINOIS			
Cairo (U)	946	1572	1465
Chicago (Midway)	1225	2209	2352
Chicago (O'Hare)	1282	2378	
Moline	1277	2383	2434
Peoria	1278	2399	2323
Rockford	1331	2584	
Springfield	1209	2124	2193
INDIANA			
Evansville	1060	1872	1715
Ft. Wayne	1276	2402	2382
Indianapolis	1245	2263	2141
South Bend	1239	2360	2442
IOWA			
Burlington	1193	2227	2334
Des Moines	1202	2338	2472
Dubuque	1381	2743	2801
Sioux City	1224	2424	2733
Waterloo	1381	2776	2758
KANSAS			
Concordia (U)	1027	1916	2048
Dodge City	992	1865	1951
Goodland	1061	2233	2461
Topeka	1044	1902	2027
Wichita	990	1719	1763
KENTUCKY			
Lexington	1081	1874	1884
Louisville	1078	1924	1733
LOUISIANA			
Alexandria	577	872	
Baton Rouge	505	719	615
Lake Charles	445	591	593
New Orleans (U)	366	452	429
New Orleans	406	568	484
Shreveport	626	920	848
MAINE			
Caribou	1497	3596	3918
Greenville (U)	1529	3622	
Portland	1317	2879	2847
MARYLAND			
Baltimore (U)	1015	1618	1537
Baltimore	1127	1947	1818
Frederick	1220	2233	1841
MASSACHUSETTS			
Blue Hill Obs. (R)	1206	2385	
Boston	1094	2040	2015
Nantucket	1022	2031	2078
Pittsfield	1374	2934	2933
Worcester	1288	2707	
MICHIGAN			
Alpena	1387	3259	2962
Detroit (City AP)	1229	2290	2333
Detroit (M. Wayne Co.)	1280	2402	
Detroit (Willow Run)	1273	2350	2383
Escanaba (U)	1406	3070	3213
Flint	1336	2697	2668
Grand Rapids	1269	2480	2640
Lansing	1301	2621	
Marquette (U)	1388	3126	3167
Muskegon	1186	2470	2593
S. Ste. Marie	1489	3400	3575
MINNESOTA			
Duluth	1626	3657	3342
Internat. Falls	1855	4119	4223
Minneapolis	1490	3157	3015
Rochester	1476	3088	3144
St. Cloud	1525	3311	3483
MISSISSIPPI			
Jackson	626	973	832
Meridian	635	1029	956
Vicksburg (U)	597	907	775
MISSOURI			
Columbia	1042	1814	1973
Kansas City	1046	1761	1875
St. Joseph	1066	1984	2048
St. Louis (RFC)	958	1659	1703
St. Louis	1048	1819	1805
Springfield	1003	1734	1841
MONTANA			
Billings	1067	2507	2767
Butte	1392	3894	4029
Glasgow	1468	3334	3458
Great Falls	1073	2682	2959
Havre (U)	1351	3114	3298
Helena	1266	3135	3349
Kalispell	1342	3483	3334
Miles City	1291	2848	3068
Missoula	1442	3454	3270
NEBRASKA			
Grand Island	1136	2309	2459
Lincoln (U)	1087	2098	2250
Norfolk	1208	2508	2744
North Platte	1162	2523	2581
Omaha	1110	2159	2373
Omaha N. Omaha AP	1179	2342	
Scottsbluff	1305	2742	2638
Valentine	1278	2748	2730
NEVADA			
Elko	1201	2866	2905
Ely	1183	2862	2930
Las Vegas	636	1050	969
Reno	1015	2460	2426
Tonopah	958	2150	2241
Winnemucca	1071	2574	2612
NEW HAMPSHIRE			
Concord	1360	2875	2907
Mt. Washington Obs. (R)	1880	6057	
NEW JERSEY			
Atlantic City	1007	1782	
Atlantic City (U)	1074	1828	1597
Newark	1079	1825	1912
Trenton (U)	1104	1923	1852
NEW MEXICO			
Albuquerque	956	1763	1757
Clayton	1002	2052	1991
Raton	1177	2517	2534
Roswell	1102	1797	1415
Silver City	872	1560	
NEW YORK			
Albany	1338	2637	2583
Binghamton	1365	2753	2851
Buffalo	1338	2542	2470
New York (U)	1054	1804	1771
New York (LaGuardia)	1022	1680	1732
Rochester	1280	2508	2516
Schenectady	1265	2462	2616
Syracuse	1273	2469	2369
NORTH CAROLINA			
Asheville (U)	931	1679	1633
Cape Hatteras (R)	682	982	788
Charlotte	809	1313	1274
Greensboro	929	1617	1513
Raleigh	874	1477	1304
Wilmington	721	1095	869
Winston-Salem	887	1527	1458
NORTH DAKOTA			
Bismarck	1488	3363	3524
Devils Lake (U)	1704	3738	3903
Fargo	1701	3540	3604
Grand Forks CAA	1738	3756	
Pembina	1805	3711	
Williston (U)	1417	3264	3566
OHIO			
Akron	1328	2437	2298
Cincinnati (U)	1049	1719	1711
Cincinnati	1116	1945	1999
Cincinnati Obs.	1113	1920	1861
Cleveland	1299	2509	2181
Columbus	1229	2180	2139
Columbus (U)	1199	2077	1995
Dayton	1252	2219	2128
Mansfield	1299	2419	
Sandusky (U)	1218	2178	2116
Toledo	1327	2507	2376
Youngstown	1316	2498	2274
OKLAHOMA			
Oklahoma City	852	1357	1417
Tulsa	814	1295	1382
OREGON			
Astoria	661	2115	1961
Burns (U)	1129	2876	2829
Eugene	802	1955	1939
Meacham	1086	3144	3105
Medford	839	1843	1849
Pendleton	1061	2193	2095
Portland (U)	734	1621	1627
Portland	807	1855	1817
Roseburg	742	1741	1812
Salem	765	1809	1815
Sexton Summit (R)	748	2367	2373
PENNSYLVANIA			
Allentown	1257	2324	2205
Erie	1221	2295	2327
Harrisburg	1216	2139	1971
Philadelphia (U)	1000	1639	1624
Philadelphia	1150	2064	1791
Pittsburgh (U)	1133	1975	1890
Pittsburgh	1284	2346	2268
Reading (U)	1141	1990	1871
Scranton	1331	2581	2272
Williamsport	1325	2511	2250
RHODE ISLAND			
Block Island	1021	1920	1963
RHODE ISLAND (Cont'd.)			
Providence	1159	2239	2221
SOUTH CAROLINA			
Charleston (U)	567	751	658
Charleston	651	929	778
Columbia	728	1130	978
Florence	734	1103	1015
Greenville	781	1257	1200
Spartanburg	813	1327	1211
SOUTH DAKOTA			
Huron	1523	3235	3029
Pierre	1402	2854	
Rapid City	1234	2645	2858
Sioux Falls	1357	2841	3062
TENNESSEE			
Bristol	999	1755	1688
Chattanooga	877	1520	1380
Knoxville	917	1543	1454
Memphis (U)	821	1275	1142
Memphis	853	1382	1248
Nashville	931	1588	1372
Oak Ridge (U)	935	1632	1669
TEXAS			
Abilene	739	1058	1048
Amarillo	929	1699	1730
Austin	512	720	646
Brownsville	229	272	218
Corpus Christi	330	420	365
Dallas	639	921	870
Del Rio (U)	499	653	
El Paso	806	1249	1086
Ft. Worth	658	956	890
Galveston (U)	366	455	402
Galveston	371	455	418
Houston (U)	402	529	465
Houston	390	511	509
Laredo	382	467	306
Lubbock	872	1436	1444
Midland	758	1131	1060
Port Arthur	443	590	587
San Angelo	662	933	854
San Antonio	457	612	600
Victoria	395	518	408
Waco	586	828	754
Wichita Falls	786	1142	1181
UTAH			
Milford	1121	2364	2551
Salt Lake City	1088	2272	2279
Wendover	1121	2241	
VERMONT			
Burlington	1399	3044	2925
VIRGINIA			
Lynchburg	989	1736	1625
Norfolk	877	1384	1257
Richmond	936	1656	1532
Roanoke	1001	1740	1632
WASHINGTON			
Olympia	835	2399	2254
Seattle (U)	675	1780	1776
Seattle	745	1865	1950
Seattle-Tacoma	783	2141	2163
Spokane	1186	2828	2750
Stampede Pass (R)	1233	3913	3831
Tatoosh Island (R)	610	2448	2480
Walla Walla	1066	2135	
Walla Walla (U)	1039	2022	1966
Yakima	1164	2630	2476
WEST VIRGINIA			
Charleston	1074	1828	1720
Huntington (U)	1041	1776	1597
Parkersburg (U)	1107	1923	1824
WISCONSIN			
Green Bay	1408	3049	3125
La Crosse	1342	2740	2931
Madison	1361	2841	2846
Milwaukee	1312	2774	2663
WYOMING			
Casper	1220	2943	3021
Cheyenne	1176	2787	2912
Lander	1381	3186	3339
Sheridan	1194	2897	3113

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

DECEMBER 1960

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡HEAVY SNOWSTORMS AND BLIZZARDS				#ICE STORMS				∅ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alabama *																													
Alaska *																													
Arizona *																													
Arkansas *																													
California										1	0	5	0																
Colorado *																													
Connecticut																		2	0	5	0								
Delaware *																													
Florida *																													
Georgia *																													
Hawaii *																													
Idaho *																													
Illinois																		7	21	5	0								
Indiana *																													
Iowa *																													
Kansas																						0	12						
Kentucky *																													
Louisiana										0	0	6	0																
Maine																		0		4	0								
Maryland *																													
Massachusetts										0	0	3	0					6		5	0					0	0	4	0
Michigan *																													
Minnesota *																													
Mississippi *																													
Missouri	1	1			4																								
Montana																										1	0	0	0
Nebraska *																													
Nevada *																													
New Hampshire																		1		4	0								
New Jersey																		52	N	5	0								
New Mexico																		0	0	4	0	0	1	6	0				
New York										1										6									
North Carolina *																													
North Dakota																		0	2	5	0								
Ohio *																													
Oklahoma														0	0	2	0					0	0	4	0				
Oregon *																													
Pennsylvania																		14	19	4				4					
Puerto Rico																										4	1	°6	C
Rhode Island																		0	0	5	0								
South Carolina *																													
South Dakota																				4									
Tennessee *																													
Texas																						0	0	5	0	0	0	°4	C
Utah *																													
Vermont																		0		3	0								
U. S. Virgin Is.																										0	0	°4	C
Virginia																		D	U			D7	U						
Washington *																													
West Virginia *																													
Wisconsin *																													
Wyoming																		0	1	0	0								

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
# Freezing drizzle and freezing rain, commonly known as glaze.
∅ For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
° Includes crop damage.
C Crop damage.
U Unknown.
D Deaths were due to accidents on icy roads made slippery by a combination of freezing rain, sleet, and snow.
N No report.

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

DECEMBER 1960

Flooding during December in continental United States was confined to southern Arkansas and Eastern Texas. Severe flooding occurred on small creeks in the Trinity and Brazos River Basins.

Flooding occurred on many streams in various parts of Puerto Rico during the period November 30 to December 4. The most severe flooding occurred on the 3d and 4th. The principal area of flooding was the south coastal plain from Yauco on the west to Arroyo on the east. Highways were flooded in many places. Damage to public facilities in the vicinity of Ponce were estimated to be $60, 000, and crop losses were estimated at $275, 000. Rio Guanajibo from San German to the sea at the west end of the island had a flood reported by a plantation owner to be the highest in 32 years. Rio Gurabo, toward the east, reached a stage of about 24 feet, which was about 5 feet lower than the crest of the great flood of September 6, 1960. Four deaths were reported.

Heavy local flooding was reported on some streams in Hawaii on the island of Oahu on December 30-31. The highest stage since 1930 was reported on Pukele stream in Honolulu.

MISSISSIPPI SYSTEM

Red Basin. --Moderate to locally heavy rains over the Red River Basin caused minor flooding on the Caddo, Ouachita, and Little Rivers in Arkansas and on the Sulphur and Cypress Rivers in Texas. Damage was negligible in Arkansas. In Texas, the chief damage was to fences and winter grazing for livestock in Panola County. A few head of cattle drowned in the Little River area. Otherwise most of the land that flooded was bottom land out of cultivation. No damage was reported from the oil field area.

WEST GULF OF MEXICO DRAINAGE

The light flooding on the Calcasieu and Sabine Rivers in Texas was due to scattered showers from the 4th through the 10th. During the first 4 days of this period daily amounts in excess of 1 inch were widely scattered. On the 8th, rains averaged about 1. 25 inches over the entire area. General rains on the 28th and 29th caused minor flooding on the Sabine at Bon Wier, Tex. Damage from the overflows was slight. A few fishing camps and oil rigs around Bon Wier, Tex., were affected.

Excessive rains persisted in north-central and east Texas from the 5th to the 9th, with amounts ranging from 2 to 9 inches. The center of 9. 36 inches was near Tyler at the headwaters of the Neches Basin. Sharp rises occurred on the 7th and 8th on the Trinity at Trinidad, Tex., on the Little River at Cameron, Tex., and on the Brazos from Waco to Washington. Flooding on the East Fork at Rockwall, Tex., was controlled by releases from Lavon Reservoir and the crest on the 23d was only 0. 6 foot above flood stage. Flooding occurred on the Trinity in the reach from Trinidad to Midway, Tex., from the 8th to the 22d, and at Liberty, Tex., from the 10th to the 29th. Severe flooding occurred on Richland and Chambers Creeks. Flooding on the Little River at Cameron lasted from the 8th to the 11th. The rises on the Brazos were well below flood stage from Waco to Richmond, with light flooding at East Columbia, Tex., from the 13th to the 15th. Severe flooding occurred on Cedar Creek. The Navasota River at Easterly, Tex., reached the second highest stage since 1944. A major portion of the flood damage occurred along the Trinity in Anderson and Freestone Counties. Seventy percent of the damages occurred as cattle losses in the river bottoms. There was some minor damage to equipment, bridges, and fences by the tributaries of the Trinity.

Rains of 1 to 2 inches on the 27th and 28th followed by another rain of 1 inch on the 30th over the Lavaca and Navidad Basins caused light flooding on the Navidad at Ganado. The Lavaca River rose to about three-fourths bankfull at Edna, Tex. Moderate rises occurred on the Guadalupe and San Antonio Rivers, but no flooding resulted. No significant damage resulted from the minor flooding on the Navidad.

Moderate rains of 1 to 2 inches on the 7th to the 9th caused minor flooding on the lower Atascosa on the 8th and 9th and on the lower Nueces below Three Rivers, Tex., on the 12th and 13th. Heavy rains of 5 to 7 inches centered over Nueces and San Patricio Counties on the 28th and 29th resulted in extensive flooding of streets, highways, and farmlands in those counties. Most Gulf drainage creeks in that area were reported bankfull with some flooding. Damages were largely confined to streets and highways.

PACIFIC SLOPE DRAINAGE

Sacramento Basin. --Heavy rains during the 48-hour period ending on the morning of the 2d caused a significant rise in the Sacramento River and overflow into upper bypass areas at Moulton, Colusa, and Tisdale, Calif.

FLOOD STAGE DATA

(All dates in December unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
MISSISSIPPI SYSTEM	Ft.			Ft.	
Red Basin					
Caddo· Glennwood, Ark.	10	8	14	18.9	6
Ouachita: Arkadelphia, Ark.	17	8	8	17.2	8
		11	12	17.8	11
Little: Horatio, Ark.	27	8	14	30.8	12
Whitecliffs, Ark.	25	9	17	27.1	13
Sulphur: Naples, Tex.	22	9		30.8	11
Cypress: Jefferson, Tex.	18	11	19	19.5	12
WEST GULF OF MEXICO DRAINAGE					
Calcasieu: Hineston, La.	12	12	15	12.4	13,14
		31	1/		
Sabine: Deweyville, Tex.	14	15	1/	14.5	20,21
Bon Wier, Tex.	17	30	1/	17.8	30
East Fork Trinity: Rockwall, Tex.	10	21	28	10.6	23
Trinity: Trinidad, Tex.	28	[illegible]	15	33.45	11
Long Lake, Tex.	40	11	19	45.3	13
Midway, Tex.	40	16	22	43.0	19
Liberty, Tex.	24	Nov. 23	Nov. 28	27.0	Nov. 26
		10	29	28.0	15
WEST GULF OF MEXICO DRAINAGE (Cont'd.)	Ft.			Ft.	
Little: Cameron, Tex.	30	8	11	33.9	9
Brazos: East Columbia, Tex.	30	13	15	30.8	15
Navidad: Ganado, Tex.	21	30	Jan. 2	24.9	Jan. 1
Atascosa: Whitsett, Tex.	20	8	9	20.9	9
Nueces: Tilden, Tex.	14	29	30	15.0	30
Calallen, Tex.	7	12	13	7.1	12-13
PACIFIC SLOPE DRAINAGE					
Sacramento: Moulton (Weir), Calif.	77	2	3	77.1	3
Colusa (Weir), Calif.	62	2	3	65.2	3
Tisdale (Weir), Calif.	45	2	4	48.0	3

* Provisional

1 Continued at end of month

RAWINSONDE DATA

Average monthly values

DECEMBER 1960

ALBANY, N. Y. (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	86	-8.6	78	244	3.3
1,000	31	158			246	5.2
950	31	559	-6.9	64	272	10.9
900	31	980	-8.2	64	287	15.0
850	31	1,422	-9.5	62	287	18.8
800	31	1,890	-10.8	57	283	21.8
750	31	2,387	-11.8	51	279	26.0
700	31	2,912	-13.6	51	276	29.9
650	31	3,474	-15.4	51	273	35.0
600	31	4,075	-18.2	48	270	38.7
550	31	4,718	-21.7	43	267	42.9
500	31	5,418	-25.8	39	265	47.4
450	31	6,170	-30.9	37	267	49.7
400	31	7,000	-36.7		266	56.7
350	31	7,914	-42.5		262	55.4
300	31	8,942	-48.9		261	53.4
250	31	10,127	-53.1		268	53.0
200	30	11,560	-54.8		267	54.8
175	29	12,420	-54.0		268	57.3
150	28	13,414	-55.1		265	53.6
125	27	14,576	-56.0		264	52.3
100	27	15,988	-57.9		259	50.7
80	27	17,393	-58.2		260	45.1
60	26	19,210	-58.4		256	32.3
50	26	20,357	-58.7		250	28.2
40	24	21,762	-57.9		251	25.1
30	22	23,585	-57.1		244	8.7
25	21	24,732	-56.6		299	4.3
20	20	26,146	-56.2		274	8.5
15	13	28,034	-53.1		265	15.7

ALBUQUERQUE, N. MEX. (842 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,619	-2.2	70	72	2.7
1,000	31	227				
950	31	638				
900	31	1,075				
850	31	1,538				
800	31	2,023	-1.2	58	57	2.5
750	31	2,533	-2.2	56	303	5.4
700	31	3,084	-4.2	53	295	9.5
650	31	3,657	-6.6	50	275	13.8
600	31	4,288	-10.0	42	263	16.9
550	31	4,944	-14.5	41	265	21.0
500	31	5,670	-19.3	40	272	23.3
450	31	6,438	-24.8		268	26.8
400	31	7,294	-30.9		262	29.5
350	31	8,229	-37.7		261	31.1
300	31	9,276	-44.9		267	34.8
250	31	10,476	-51.7		274	42.0
200	31	11,906	-56.9		273	47.8
175	31	12,747	-59.2		277	45.5
150	31	13,710	-60.6		277	46.2
125	31	14,842	-62.2		277	45.3
100	31	16,215	-64.1		278	36.3
80	30	17,572	-66.1		288	27.6
60	30	19,319	-65.1		293	16.1
50	29	20,431	-64.0		295	15.9
40	26	21,794	-63.4		306	13.4
30	22	23,557	-61.4		295	7.2
25	20	24,689	-60.4		285	8.7
20	16	26,081	-57.6		296	12.0
15	9	27,911	-54.9			

AMARILLO, TEXAS (896 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,095	-1.2	81	307	2.9
1,000	31	209				
950	31	623				
900	31	1,059				
850	31	1,516	.6	54	305	4.7
800	31	2,003	.8	51	292	5.4
750	31	2,519	-.1	45	286	8.0
700	31	3,072	-2.7	44	278	9.1
650	31	3,652	-5.7	44	274	14.8
600	31	4,281	-9.2	42	267	18.7
550	31	4,943	-13.4	41	267	21.4
500	31	5,667	-18.4	37	270	25.8
450	31	6,438	-24.0		269	29.5
400	31	7,295	-30.3		266	35.0
350	31	8,232	-37.2		264	41.4
300	31	9,281	-44.8		265	49.5
250	31	10,479	-52.3		265	58.1
200	31	11,902	-57.7		268	62.6
175	29	12,733	-59.5		268	57.1
150	29	13,696	-60.3		271	53.8
125	26	14,823	-62.5		276	49.7
100	11	16,223	-63.9		270	40.2
80	5	17,572	-65.3			
60						
50						
40						
30						
25						
20						
15						

ANCHORAGE, ALASKA (1001 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	30	-4.2	81	328	1.9
1,000	31	39			317	2.1
950	31	446	-1.2	65	109	1.9
900	31	877	-2.2	63	129	8.4
850	31	1,329	-4.6	62	137	14.8
800	31	1,804	-7.7	61	145	17.7
750	31	2,303	-10.7	62	158	18.8
700	31	2,831	-14.0	60	164	21.0
650	31	3,389	-17.5	55	169	18.5
600	31	3,986	-21.2	56	175	18.1
550	31	4,619	-25.2	54	186	17.7
500	31	5,309	-29.9	55	190	18.5
450	31	6,047	-34.8	51	198	20.2
400	31	6,865	-40.8		204	23.3
350	31	7,761	-46.8		210	26.0
300	31	8,771	-51.9		212	27.4
250	31	9,944	-54.0		214	28.8
200	31	11,384	-52.4		210	25.8
175	31	12,248	-51.0		213	24.3
150	31	13,252	-50.8		210	20.4
125	31	14,441	-50.3		217	20.4
100	31	15,900	-49.8		214	18.7
80	31	17,358	-50.2		223	15.2
60	31	19,234	-50.7		231	9.9
50	30	20,421	-50.6		246	5.4
40	27	21,886	-50.2		268	5.6
30	25	23,776	-49.8		326	5.8
25	23	24,974	-50.0		353	9.3
20	21	26,421	-50.6		3	15.3
15	15	28,328	-50.6		357	21.4

ANNETTE, ALASKA (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	37	3.9	83	122	6.4
1,000	30	148	3.8	80	136	8.5
950	30	562	1.6	76	158	12.2
900	30	997	-.3	74	178	13.4
850	30	1,453	-2.6	70	199	14.6
800	30	1,932	-4.6	62	212	17.7
750	30	2,437	-7.4	60	222	18.7
700	30	2,973	-10.6	54	229	20.0
650	30	3,536	-13.8	51	229	22.7
600	30	4,144	-17.3	52	225	24.7
550	30	4,789	-21.4	53	229	27.0
500	30	5,490	-25.6	50	239	26.6
450	30	6,238	-30.9	50	244	28.0
400	30	7,077	-36.6	54	243	33.0
350	30	7,986	-43.2		248	35.0
300	30	9,008	-50.3		261	41.2
250	30	10,181	-56.3		270	41.2
200	30	11,588	-58.6		270	39.4
175	28	12,420	-56.8		265	34.2
150	26	13,391	-55.5		265	30.9
125	24	14,545	-54.7		271	22.9
100	24	15,970	-55.2		274	18.5
80	21	17,396	-55.7		283	18.5
60	20	19,228	-56.0		293	13.4
50	18	20,378	-55.8		301	14.0
40	17	21,796	-55.5		342	9.5
30	17	23,631	-55.9		358	13.2
25	14	24,793	-56.4		7	17.5
20	13	26,201	-57.5			
15	8	27,977	-58.6			

ATHENS, GA. (995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	246	0.4	72	309	3.5
1,000	31	202				
950	31	622	3.7	53	304	8.0
900	31	1,058	3.0	52	289	9.3
850	31	1,521	1.9	50	280	14.2
800	31	2,009	1.3	39	277	19.8
750	31	2,523	-.6	38	275	21.2
700	31	3,076	-2.9		276	24.3
650	31	3,656	-5.5		276	29.7
600	31	4,285	-8.8		274	36.5
550	31	4,947	-13.0		273	39.4
500	31	5,674	-17.7		271	41.0
450	31	6,445	-23.0		271	47.2
400	31	7,309	-29.0		270	54.8
350	30	8,257	-35.9		272	61.2
300	30	9,313	-43.2		275	72.3
250	29	10,526	-50.7		275	77.3
200	28	11,959	-57.5		277	81.6
175	28	12,798	-59.9		276	79.9
150	28	13,759	-61.5		273	75.6
125	26	14,890	-63.0		274	59.1
100	25	16,266	-65.6		273	49.5
80	24	17,619	-66.9		275	39.6
60	22	19,367	-65.5		277	21.4
50	21	20,479	-63.1		277	19.8
40	20	21,857	-60.5		275	13.2
30	19	23,662	-57.6		286	17.3
25	17	24,819	-56.6		276	9.3
20	14	26,241	-55.1		279	22.2
15	7	28,077	-53.0			
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BARROW, ALASKA (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	8	-22.0	65	108	8.5
1,000	31	117	-20.0	63	97	14.4
950	31	504	-15.0	58	94	17.9
900	31	913	-12.3	54	98	15.5
850	31	1,350	-12.3	51	102	13.6
800	31	1,813	-13.3	46	108	12.2
750	31	2,301	-15.1	41	116	10.3
700	31	2,823	-17.7	38	120	9.7
650	31	3,370	-20.9		131	8.5
600	31	3,961	-24.7		156	6.6
550	31	4,583	-28.6		172	6.8
500	31	5,267	-33.1		202	7.8
450	31	5,997	-37.9		223	10.1
400	31	6,804	-43.2		235	14.2
350	31	7,692	-48.7		242	16.7
300	31	8,693	-53.9		243	18.5
250	31	9,857	-56.1		235	20.0
200	31	11,279	-54.1		228	18.7
175	31	12,139	-52.8		229	21.2
150	31	13,136	-52.0		233	21.0
125	31	14,320	-51.1		234	22.3
100	31	15,772	-50.8		239	25.1
80	30	17,226	-50.4		243	26.2
60	30	19,102	-50.6		251	29.1
50	29	20,286	-50.6		257	32.4
40	29	21,739	-51.1		263	33.0
30	27	23,605	-52.0		269	38.1
25	25	24,792	-52.3		275	43.3
20	21	26,251	-52.0		279	47.0
15	15	28,171	-51.4			
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BARTER IS., ALASKA (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	15	-19.1	69	96	6.6
1,000	29	121	-18.4	63	96	13.2
950	29	511	-12.5	59	111	14.8
900	29	923	-10.3	52	117	11.5
850	29	1,363	-10.5	47	124	8.7
800	29	1,828	-12.2	44	139	7.8
750	29	2,317	-14.6	42	172	7.2
700	29	2,838	-17.2	37	183	4.3
650	29	3,387	-20.2		193	3.9
600	29	3,978	-23.9		246	5.6
550	29	4,602	-27.9		264	7.8
500	29	5,285	-32.6		260	11.9
450	29	6,009	-37.5		262	15.2
400	29	6,823	-43.2		264	16.9
350	29	7,712	-48.7		267	20.0
300	29	8,713	-54.1		271	17.3
250	29	9,873	-56.9		266	18.1
200	29	11,295	-53.8		262	20.8
175	26	12,152	-52.1		263	20.0
150	26	13,151	-51.9		270	19.6
125	26	14,334	-51.3		268	22.5
100	26	15,783	-51.1		272	23.3
80	25	17,236	-51.5		273	25.6
60	25	19,102	-51.6		281	27.0
50	25	20,284	-51.8		284	29.1
40	25	21,728	-52.1		288	31.7
30	24	23,599	-52.6		290	31.7
25	23	24,768	-53.5		287	27.8
20	19	26,188	-54.7		290	33.0
15	16	28,005	-56.2		297	31.9
10	9	30,577	-57.8			

BETHEL, ALASKA (992 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	-6.7	84	89	5.2
1,000	31	-22				
950	31	382	-3.1	77	128	11.9
900	31	809	-4.5	73	159	14.4
850	31	1,258	-6.8	69	166	15.2
800	31	1,730	-9.3	64	162	15.0
750	31	2,227	-12.0	61	163	14.8
700	31	2,752	-14.9	56	162	18.3
650	31	3,307	-18.2	53	162	18.5
600	31	3,903	-22.0	50	162	22.2
550	31	4,535	-26.3	49	163	21.4
500	31	5,221	-30.7	47	169	22.9
450	31	5,961	-35.3	48	174	23.5
400	31	6,774	-41.0		174	26.2
350	31	7,670	-47.2		172	29.9
300	31	8,677	-52.8		173	34.8
250	31	9,847	-54.5		175	33.4
200	30	11,289	-51.0		177	28.8
175	30	12,161	-50.0		179	27.8
150	29	13,168	-49.3		187	23.7
125	29	14,365	-48.5		190	23.1
100	28	15,837	-48.3		193	21.4
80	28	17,306	-48.6		196	19.0
60	26	19,196	-48.8		209	12.8
50	24	20,391	-48.8		213	10.1
40	23	21,856	-48.0		212	7.8
30	22	23,749	-48.0		267	4.7
25	19	24,957	-47.9		311	5.1
20	18	26,421	-48.3		349	5.1
15	6	28,253	-50.0			
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BISMARCK, N. DAK. (960 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	505	-10.0	72	295	4.1
1,000	31	186				
950	31	583			290	4.7
900	31	1,004	-5.8	63	299	16.1
850	31	1,453	-5.0	58	308	19.6
800	31	1,929	-6.1	52	311	23.1
750	31	2,430	-8.0	50	309	26.0
700	31	2,966	-10.7	47	308	29.3
650	31	3,529	-13.6	43	309	32.8
600	31	4,139	-16.8	42	308	38.3
550	31	4,781	-20.8	40	306	41.6
500	31	5,486	-25.3	40	308	40.8
450	31	6,233	-30.6		308	43.1
400	31	7,071	-36.8		302	46.2
350	31	7,982	-43.6		307	51.1
300	31	9,003	-50.6		306	56.3
250	31	10,175	-56.2		304	58.1
200	30	11,580	-57.4		299	56.0
175	30	12,426	-56.3		297	52.8
150	30	13,405	-56.3		301	48.4
125	30	14,563	-56.3		300	45.5
100	24	16,000	-57.3		298	32.3
80	23	17,414	-58.3		301	26.6
60	23	19,220	-59.4		305	19.0
50	23	20,363	-59.0		311	13.8
40	23	21,766	-58.3		321	11.7
30	22	23,573	-58.5		336	7.6
25	22	24,718	-59.0		1	7.4
20	21	26,120	-59.2		1	8.0
15	11	27,949	-59.4			
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BOISE, IDAHO (926 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	868	-3.2	88	141	2.7
1,000	31	250				
950	31	658				
900	31	1,090	-.7	69	162	1.7
850	31	1,548	-.8	60	215	.8
800	31	2,032	-1.5	56	289	6.8
750	31	2,543	-3.0	53	295	10.7
700	31	3,089	-5.6	48	292	12.2
650	31	3,662	-9.0	45	298	13.4
600	31	4,283	-12.5	40	299	15.5
550	31	4,937	-16.1	37	300	21.4
500	31	5,657	-20.6	36	306	22.0
450	31	6,424	-26.1	36	305	23.5
400	31	7,272	-32.3	35	308	24.1
350	31	8,200	-39.2		312	25.3
300	31	9,239	-47.1		307	27.2
250	31	10,423	-55.2		314	34.2
200	31	11,829	-59.7		313	37.1
175	31	12,664	-60.0		301	33.8
150	31	13,627	-59.5		301	31.3
125	31	14,768	-59.9		300	29.9
100	31	16,157	-61.6		297	24.1
80	30	17,536	-61.9		305	17.7
60	30	19,315	-61.9		313	13.8
50	30	20,445	-61.4		327	10.5
40	29	21,835	-60.9		353	11.9
30	27	23,641	-59.5		18	12.4
25	26	24,782	-59.5		27	13.6
20	22	26,166	-59.6		18	14.6
15	16	27,979	-58.5		337	3.3

BROWNSVILLE, TEX. (1021 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	12.0	93	329	3.5
1,000	31	181	13.1	86	348	4.1
950	31	612	12.6	82	181	3.3
900	31	1,067	11.5	79	192	10.5
850	31	1,544	10.0	73	205	11.7
800	31	2,048	7.9	71	209	14.8
750	31	2,581	6.2	59	220	13.4
700	31	3,143	4.1	45	241	14.4
650	31	3,738	.7	39	254	16.3
600	31	4,382	-3.0		258	19.6
550	30	5,058	-7.3	31	262	23.5
500	30	5,804	-11.9		267	29.0
450	30	6,600	-17.1		261	34.4
400	30	7,479	-23.3		258	39.6
350	30	8,442	-30.3		255	44.9
300	30	9,520	-38.5		257	51.7
250	30	10,748	-48.0		260	57.3
200	30	12,185	-58.3		259	62.4
175	30	13,016	-62.6		260	66.8
150	29	13,958	-65.1		259	57.9
125	29	15,062	-68.3		262	48.6
100	29	16,389	-72.2		261	38.1
80	28	17,693	-72.9		260	28.8
60	28	19,395	-68.1		261	21.6
50	28	20,500	-64.6		263	17.3
40	25	21,869	-61.4		259	19.2
30	22	23,668	-58.1		254	22.7
25	22	24,819	-56.9		256	28.4
20	16	26,245	-54.4		259	31.5
15	10	28,131	-49.3			

BUFFALO, N. Y. (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	218	-6.5	77	236	5.4
1,000	31	167				
950	31	564	-6.8	73	247	17.1
900	31	989	-8.3	70	259	19.6
850	31	1,431	-9.8	66	267	22.9
800	31	1,898	-11.0	61	271	24.3
750	31	2,390	-12.1	57	274	25.6
700	31	2,918	-14.1	54	274	30.5
650	31	3,475	-16.5	51	276	32.8
600	31	4,077	-19.4	49	274	37.5
550	31	4,717	-22.9	46	274	41.6
500	31	5,413	-26.6	41	271	46.0
450	31	6,160	-31.5		270	49.4
400	31	6,992	-37.1		271	54.0
350	29	7,901	-43.0		271	58.1
300	29	8,928	-48.7		269	62.2
250	29	10,114	-53.0		267	64.5
200	28	11,544	-54.1		264	60.8
175	27	12,406	-53.7		265	58.3
150	25	13,385	-53.9		262	53.0
125	23	14,548	-55.4		262	46.6
100	22	15,966	-56.6		259	37.1
80	18	17,372	-58.4		254	41.4
60	12	19,191	-58.4		264	35.6
50	11	20,329	-58.8			
40	7	21,673	-59.1			
30						
25						
20						
15						

BURRWOOD, LA. (1023 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	3	12.9	82	54	5.4
1,000	31	192	13.3	72	58	5.2
950	31	621	10.7	71	92	3.9
900	31	1,071	8.9	65	217	2.7
850	31	1,544	7.8	50	257	6.2
800	31	2,043	6.5	43	273	9.5
750	31	2,573	4.4	40	266	12.6
700	31	3,130	1.9		262	16.7
650	31	3,724	-.9		262	21.6
600	31	4,360	-4.4		262	26.6
550	31	5,034	-8.4		263	29.7
500	31	5,774	-13.0		266	37.3
450	31	6,566	-18.2		265	42.7
400	31	7,439	-24.4		268	48.4
350	31	8,399	-31.3		265	55.0
300	31	9,474	-39.4		266	63.7
250	31	10,700	-48.2		268	71.9
200	31	12,138	-58.0		269	77.9
175	31	12,972	-61.6		267	73.4
150	31	13,923	-64.1		264	64.5
125	31	15,033	-66.8		264	58.5
100	30	16,377	-70.0		264	45.9
80	29	17,699	-71.1		264	32.3
60	27	19,420	-67.7		270	22.7
50	27	20,526	-64.7		269	17.3
40	24	21,898	-60.8		263	18.1
30	24	23,706	-56.9		260	26.0
25	22	24,861	-55.4		263	29.5
20	16	26,297	-53.6		263	31.3
15	11	28,173	-49.5			

CAPE HATTERAS, N. C. (1022 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	3.3	78	330	6.6
1,000	31	179	5.3	59	337	10.5
950	31	594	3.9	50	321	9.5
900	31	1,037	2.5	49	285	10.7
850	31	1,498	1.3	46	271	16.1
800	31	1,986	.2	40	270	20.8
750	31	2,496	-1.5	35	268	25.3
700	31	3,050	-3.6	33	269	29.1
650	31	3,625	-6.4	35	272	33.6
600	31	4,256	-9.5	32	271	38.3
550	31	4,917	-13.6	31	271	40.2
500	31	5,644	-18.1	32	269	42.4
450	31	6,416	-23.5		270	46.6
400	31	7,277	-29.6		271	50.3
350	31	8,217	-36.1		279	51.7
300	31	9,271	-43.2		273	63.3
250	31	10,479	-50.8		272	71.7
200	31	11,912	-56.7		274	80.2
175	30	12,758	-58.5		272	77.9
150	30	13,726	-59.5		270	70.5
125	30	14,862	-61.7		269	61.8
100	29	16,236	-63.8		268	51.1
80	27	17,604	-64.8		264	38.7
60	27	19,369	-62.6		262	26.6
50	27	20,498	-61.0		262	22.3
40	22	21,891	-59.8		265	19.8
30	19	23,694	-57.6		273	17.5
25	18	24,853	-56.3		277	14.2
20	17	26,277	-54.4			
15	7	28,155	-53.1			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

DECEMBER 1960

Standard pressure surface (mb.)	CARIBOU, ME. (991 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	191	- 9.9	77	242	8.2
1,000	31	116				
950	31	512	- 9.4	73	270	14.8
900	31	930	-10.8	72	282	16.9
850	31	1,369	-11.8	67	284	18.1
800	31	1,832	-13.1	62	280	22.0
750	31	2,321	-14.2	57	271	21.6
700	31	2,845	-16.1	53	267	25.8
650	31	3,399	-18.8	50	262	29.9
600	31	3,994	-21.8	48	259	35.0
550	31	4,629	-25.4	47	259	39.4
500	31	5,318	-29.3	43	258	40.8
450	31	6,061	-34.3	40	257	44.5
400	31	6,879	-39.9		254	47.2
350	31	7,782	-45.0		252	54.4
300	31	8,802	-49.6		253	56.9
250	31	9,988	-52.1		250	56.9
200	31	11,433	-51.9		247	53.8
175	31	12,300	-51.9		250	49.5
150	31	13,299	-52.3		250	44.9
125	31	14,475	-53.5		246	42.4
100	31	15,909	-54.7		247	36.3
80	31	17,331	-56.1		247	28.2
60	30	19,160	-56.7		244	28.6
50	27	20,322	-57.2		240	21.4
40	24	21,723	-57.5		243	17.9
30	24	23,545	-56.8		240	14.8
25	23	24,708	-56.6		229	7.8
20	20	26,146	-56.9		205	5.6
15	15	27,964	-54.9		215	9.5
10						

Standard pressure surface (mb.)	CHARLESTON, S. C. (1023 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	13	1.4	76	334	3.1
1,000	31	200	6.0	55	346	5.2
950	31	617	5.8	49	308	6.2
900	31	1,064	5.1	46	277	9.7
850	31	1,530	3.8	46	270	13.0
800	31	2,022	2.5	38	274	16.3
750	31	2,539	.5		278	20.2
700	31	3,095	- 1.8		276	24.3
650	31	3,675	- 4.4		274	28.6
600	31	4,310	- 7.7		276	32.8
550	31	4,971	-11.8		276	36.7
500	31	5,707	-16.7		275	41.0
450	31	6,484	-22.3		274	43.9
400	31	7,347	-28.2		271	48.6
350	31	8,292	-35.0		278	50.7
300	31	9,352	-42.5		275	62.4
250	31	10,563	-50.2		276	72.1
200	31	11,996	-57.6		272	75.8
175	30	12,839	-60.0		274	73.3
150	30	13,798	-61.9		274	67.6
125	29	14,926	-64.4		268	58.5
100	28	16,288	-67.3		268	54.0
80	27	17,628	-67.8		268	37.3
60	27	19,369	-65.5		264	28.0
50	27	20,486	-62.5		269	19.8
40	24	21,872	-60.5		267	21.8
30	22	23,671	-58.0		267	23.3
25	19	24,824	-56.7		264	23.1
20	17	26,248	-54.2		262	23.3
15	12	28,111	-50.4		269	25.1
10						

Standard pressure surface (mb.)	COLD BAY, ALASKA (991 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	27	0.9	84	174	6.6
1,000	31	-43				
950	31	372	- .4	77	168	6.8
900	31	800	- 3.2	76	176	9.9
850	31	1,250	- 6.3	73	172	9.5
800	31	1,721	- 9.0	66	188	12.6
750	31	2,214	-12.0	58	192	12.0
700	31	2,743	-15.0	50	187	12.6
650	31	3,293	-18.4	46	196	13.4
600	31	3,893	-22.2	44	192	16.7
550	31	4,524	-25.9	41	191	20.2
500	31	5,212	-30.3	37	194	23.7
450	31	5,949	-35.0		194	25.8
400	31	6,767	-40.5		193	25.5
350	31	7,666	-46.2		187	29.1
300	31	8,678	-51.7		187	30.1
250	31	9,853	-53.8		199	23.9
200	31	11,297	-50.8		202	26.2
175	31	12,169	-49.8		202	23.5
150	31	13,180	-49.0		202	21.0
125	31	14,378	-48.7		200	19.8
100	30	15,848	-48.2		197	17.9
80	28	17,322	-48.9		207	15.2
60	28	19,211	-49.3		188	10.9
50	28	20,407	-49.5		181	7.8
40	26	21,870	-49.2		152	4.5
30	25	23,758	-48.6		101	4.7
25	25	24,958	-48.4		77	7.0
20	21	26,412	-48.5		54	9.7
15	15	28,301	-48.7		44	14.6
10	5	30,985	-48.0			

Standard pressure surface (mb.)	COLUMBIA, MO. (994 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	238	- 3.3	81	248	2.3
1,000	31	189				
950	31	599	- 2.7	66	263	8.9
900	31	1,025	- 2.4	53	283	14.0
850	31	1,479	- 2.5	51	287	16.5
800	31	1,960	- 3.2	46	287	19.6
750	31	2,468	- 4.6	40	287	23.3
700	31	3,011	- 6.7	39	285	27.4
650	31	3,583	- 9.4	41	288	29.5
600	31	4,202	-12.6	40	288	35.6
550	31	4,859	-16.4	38	289	37.7
500	31	5,573	-21.1		286	41.6
450	31	6,336	-26.6		283	42.7
400	31	7,184	-32.9		281	45.9
350	31	8,111	-39.8		282	50.5
300	31	9,150	-46.9		276	59.1
250	30	10,334	-53.7		271	69.4
200	30	11,754	-57.3		276	73.3
175	30	12,597	-58.1		277	68.6
150	30	13,568	-58.3		281	59.8
125	30	14,711	-59.7		282	52.8
100	30	16,102	-61.3		281	45.5
80	29	17,491	-62.9		278	38.3
60	29	19,263	-63.3		286	29.0
50	27	20,393	-62.2		286	23.7
40	24	21,780	-61.2		298	13.4
30	22	23,564	-59.3		275	10.9
25	19	24,685	-58.6		264	15.5
20	15	26,096	-57.6		276	19.8
15	6	27,876	-56.1			
10						

Standard pressure surface (mb.)	DAYTON, OHIO (987 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	297	- 5.9	71	233	3.5
1,000	31	196				
950	31	597	- 5.4	68	261	11.7
900	31	1,023	- 5.5	63	273	17.3
850	31	1,471	- 6.0	55	278	18.8
800	31	1,945	- 6.9	50	280	22.2
750	31	2,444	- 8.4	51	279	26.6
700	31	2,982	-10.1	[illegible]	276	29.5
650	31	3,548	-12.4	45	274	34.0
600	31	4,158	-15.7	41	278	38.5
550	31	4,805	-19.5	38	278	42.2
500	31	5,513	-23.9		279	45.5
450	31	6,266	-29.0		277	49.5
400	31	7,107	-34.9		276	53.2
350	31	8,027	-41.1		274	59.8
300	31	9,061	-47.3		272	65.3
250	31	10,252	-53.1		275	70.9
200	31	11,676	-56.8		269	76.7
175	31	12,521	-57.1		272	69.8
150	31	13,499	-57.0		272	65.3
125	31	14,649	-58.7		270	57.3
100	30	16,041	-60.5		271	47.0
80	30	17,427	-61.8		270	38.7
60	27	19,210	-61.2		268	34.0
50	26	20,336	-61.2		265	26.0
40	23	21,729	-60.5		268	17.7
30	18	23,553	-58.3		274	16.9
25	12	24,664	-58.4		258	23.1
20	9	26,051	-57.9			
15	5	27,943	-57.3			
10						

Standard pressure surface (mb.)	DENVER, COLO. (840 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,611	- 5.2	68	208	2.1
1,000	31	225				
950	31	635				
900	31	1,064				
850	31	1,519				
800	31	2,001	.1	54	290	4.5
750	31	2,515	- 1.8	50	305	8.7
700	31	3,063	- 4.6	46	310	11.3
650	31	3,641	- 7.8	43	310	13.4
600	31	4,262	-11.7	40	307	15.2
550	31	4,919	-15.9	35	299	18.3
500	31	5,635	-20.9	35	288	21.2
450	31	6,396	-26.6		293	21.6
400	31	7,245	-32.9		285	24.5
350	31	8,171	-39.9		286	27.2
300	31	9,207	-47.5		288	31.7
250	31	10,394	-54.2		288	32.4
200	31	11,810	-58.0		286	40.2
175	31	12,652	-58.4		283	41.6
150	31	13,620	-59.0		280	40.0
125	30	14,756	-59.6		285	36.7
100	30	16,146	-61.5		288	29.7
80	30	17,524	-62.8		289	28.6
60	30	19,302	-62.2		297	19.0
50	30	20,427	-62.4		308	18.1
40	30	21,806	-62.2		316	12.4
30	29	23,599	-60.5		342	7.8
25	28	24,742	-59.9		339	8.7
20	25	26,130	-59.5		326	12.2
15	17	27,885	-58.3		312	15.5
10	13	30,451	-56.2			

Standard pressure surface (mb.)	DODGE CITY, KANS. (930 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	792	- 3.0	82	309	3.1
1,000	31	215				
950	31	625				
900	31	1,056	- .9	60	287	5.8
850	31	1,513	.1	51	303	8.9
800	31	1,999	- .2	46	303	10.3
750	31	2,511	- 2.1	46	302	11.5
700	31	3,060	- 4.5	45	300	15.3
650	31	3,637	- 7.3	42	291	18.1
600	31	4,261	-10.7	37	288	20.2
550	31	4,921	-14.8	34	284	24.1
500	31	5,640	-19.6	33	281	25.8
450	31	6,407	-25.1		279	30.9
400	31	7,260	-31.6		276	35.0
350	31	8,191	-38.8		278	37.5
300	31	9,232	-46.6		272	44.9
250	31	10,422	-53.9		270	50.7
200	31	11,840	-57.9		273	59.3
175	30	12,686	-59.3		272	57.5
150	30	13,652	-59.7		274	57.5
125	30	14,788	-61.0		279	48.0
100	28	16,161	-62.9		279	39.1
80	26	17,533	-64.3		283	30.5
60	20	19,284	-63.4		289	20.8
50	16	20,419	-62.8		289	15.7
40	13	21,787	-62.8		299	12.4
30	10	23,558	-61.4		296	12.0
25	10	24,692	-60.4			
20	5	26,041	-58.8			
15						
10						

Standard pressure surface (mb.)	EL PASO, TEX. (887 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,197	- 0.2	77	32	4.7
1,000	31	218				
950	31	634				
900	31	1,072				
850	31	1,534	3.3	58	22	4.1
800	31	2,025	2.6	51	253	1.2
750	31	2,544	1.7	42	263	8.0
700	31	3,101	- .5	38	261	13.2
650	31	3,684	- 3.8	30	257	17.9
600	31	4,317	- 7.9		252	20.6
550	31	4,980	-12.5	34	249	22.9
500	31	5,709	-17.3	32	247	25.6
450	31	6,484	-23.0		246	27.6
400	31	7,343	-28.7		247	33.4
350	31	8,287	-35.2		250	38.3
300	31	9,345	-42.2		248	52.8
250	31	10,557	-50.0		252	63.3
200	31	11,992	-56.8		255	61.8
175	31	12,833	-59.6		261	57.9
150	31	13,793	-61.1		260	56.0
125	31	14,918	-63.9		265	49.5
100	31	16,279	-65.9		267	37.9
80	31	17,624	-67.9		270	29.0
60	30	19,356	-66.3		285	18.3
50	30	20,461	-65.7		286	14.6
40	30	21,822	-63.6		303	13.0
30	28	23,599	-61.4		286	13.6
25	27	24,732	-59.8		278	15.3
20	23	26.130	-57.2		267	17.7
15	13	27,972	-51.9			
10						

Standard pressure surface (mb.)	ELY, NEV. (813 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,908	- 8.5	66	176	4.5
1,000	31	272				
950	31	674				
900	31	1,105				
850	31	1,559				
800	31	2,034	- 3.7	60	188	1.4
750	31	2,542	- 2.2	46	356	4.3
700	31	3,093	- 4.4	40	335	6.8
650	31	3,666	- 7.1	36	338	8.4
600	31	4.295	-10.9	33	327	10.9
550	31	4,953	-14.9		325	12.2
500	31	5,675	-19.5		319	14.6
450	31	6,441	-25.1		318	15.0
400	31	7,295	-31.3		317	18.3
350	31	8,229	-38.1		328	20.4
300	31	9,274	-45.9		329	24.3
250	31	10,467	-53.8		318	27.8
200	31	11,882	-58.6		313	28.4
175	31	12,720	-60.0		312	23.5
150	31	13,684	-59.8		302	26.4
125	31	14,823	-60.2		294	23.1
100	31	16,211	-62.6		298	21.4
80	31	17,580	-63.9		300	17.1
60	31	19,344	-63.3		323	10.7
50	31	20,466	-62.3		335	8.9
40	31	21,844	-62.0		342	8.4
30	27	23,628	-60.9		17	8.0
25	23	24,773	-59.8		44	12.6
20	21	26,166	-58.6		38	11.3
15	16	27,994	-56.6		329	5.1
10						

Standard pressure surface (mb.)	FAIRBANKS, ALASKA (992 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	135	-14.7	72	15	2.3
1,000	31	71			14	4.1
950	31	473	- 6.5	58	97	9.1
900	31	892	- 6.7	59	4	11.5
850	31	1,339	- 6.6	57	151	12.4
800	31	1,811	- 8.0	54	174	11.9
750	31	2,310	-10.7	53	184	12.4
700	31	2,839	-13.8	51	192	13.0
650	31	3,394	-17.4	51	197	11.3
600	31	3,993	-21.4	49	201	12.0
550	31	4,625	-25.6	47	201	11.7
500	31	5,315	-30.5	45	191	13.0
450	31	6,051	-35.8		[illegible]	16.5
400	31	6,867	-41.7		206	19.2
350	31	7,759	-48.1		211	21.0
300	31	8,764	-52.9		211	23.5
250	31	9,935	-54.5		215	25.5
200	30	11,368	-53.5		215	22.9
175	30	12,230	-52.1		215	24.3
150	30	13,231	-51.0		218	22.0
125	30	14,419	-50.8		225	18.8
100	30	15,875	-50.5		225	16.7
80	30	17,331	-50.2		230	16.7
60	29	19,202	-51.2		244	15.2
50	29	20,387	-50.9		248	13.2
40	26	21,846	-50.5		267	13.6
30	26	23,722	-50.7		287	16.3
25	24	24,898	-51.2		308	16.9
20	20	26,363	-51.3		335	23.5
15	12	28,276	-50.0			
10						

Standard pressure surface (mb.)	FLINT, MICH. (992 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	234	- 6.7	78	247	6.2
1,000	31	173				
950	31	575	- 6.6	71	265	13.8
900	31	995	- 8.2	70	285	17.1
850	31	1,438	- 9.0	60	283	19.0
800	31	1,907	-10.0	56	283	22.0
750	31	2,405	-11.2	53	283	24.1
700	31	2,931	-13.5	48	284	26.6
650	31	3,491	-15.8	44	284	29.0
600	31	4,093	-18.6	40	282	34.0
550	31	4,733	-22.3	41	282	36.3
500	31	5,432	-26.7	45	281	39.8
450	31	6,175	-31.6	40	278	44.5
400	31	7,008	-37.5		279	48.6
350	31	7,917	-43.8		279	51.9
300	31	8,939	-49.9		278	56.9
250	31	10,119	-54.3		278	59.1
200	31	11,545	-55.2		274	57.9
175	31	12,399	-54.6		277	50.9
150	31	13,385	-54.9		277	49.2
125	31	14,548	-56.2		274	41.0
100	31	15,962	-57.7		273	39.4
80	31	17,365	-59.0		275	30.7
60	31	19,170	-58.8		273	26.0
50	31	20,314	-59.0		273	23.7
40	27	21,706	-58.8		271	18.7
30	24	23,541	-58.1		265	14.6
25	22	24,695	-57.2		259	14.4
20	21	26,121	-56.4		291	8.0
15	16	28,009	-56.1		93	2.5

Standard pressure surface (mb.)	FORT WORTH, TEX. (1003 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	180	3.8	83	343	2.9
1,000	31	202			15	3.1
950	31	623	4.1	70	347	1.0
900	31	1,060	4.7	63	268	2.3
850	31	1,527	4.8	57	252	7.2
800	31	2,021	3.3	58	251	10.7
750	31	2,542	1.4	52	258	14.2
700	31	3,096	- .9	47	267	17.5
650	31	3,684	- 3.5	43	268	22.7
600	31	4,313	- 7.2	40	266	24.5
550	31	4,983	-11.2	34	269	27.2
500	31	5,712	-15.9		268	31.9
450	31	6,495	-21.8		268	36.9
400	31	7,354	-27.8		269	44.1
350	31	8,301	-34.6		265	50.7
300	31	9,361	-42.3		265	59.3
250	31	10,573	-50.3		265	69.2
200	31	12,00[illegible]	-58.8		267	78.1
175	31	12,833	-61.8		266	74.2
150	31	13,787	-62.2		266	65.9
125	31	14,910	-63.8		269	57.1
100	31	16,270	-66.1		269	46.0
80	30	17,613	-67.7		275	34.8
60	29	19,352	-65.8		277	22.7
50	25	20,448	-64.1		276	19.6
40	25	21,820	-62.1		272	17.7
30	25	23,613	-59.6		264	20.8
25	24	24,755	-58.5		256	22.0
20	23	26,163	-56.6		258	29.1
15	12	28,026	-51.6		264	38.5

Standard pressure surface (mb.)	GLASGOW, MONT. (938 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	696	- 9.6	87	306	1.7
1,000	31	195				
950	31	597				
900	31	1,017	- 3.6	70	296	9.9
850	31	1,470	- 2.3	58	306	18.1
800	31	1,950	- 4.0	55	309	20.4
750	31	2,455	- 6.5	52	307	23.7
700	31	2,994	- 9.4	48	307	26.2
650	31	3,558	-12.5	44	312	30.3
600	31	4,171	-15.7	35	308	33.4
550	31	4,816	-19.8	36	311	35.4
500	31	5,523	-24.5	41	311	37.7
450	31	6,273	-29.5	42	310	39.2
400	31	7,111	-35.7		308	39.6
350	30	8,029	-42.7		309	42.2
300	29	9,056	-50.2		310	42.9
250	28	10,219	-56.6		311	48.0
200	28	11,625	-58.3		308	44.7
175	28	12,468	-57.1		306	41.2
150	28	13,445	-56.4		304	37.5
125	28	14,601	-56.8		299	31.9
100	27	16,016	-58.6		311	30.5
80	27	17,418	-58.6		310	25.1
60	27	19,224	-59.2		320	20.4
50	27	20,365	-59.3		325	17.9
40	27	21,764	-58.9		342	16.1
30	24	23,555	-58.6		350	13.6
25	20	24,721	-58.0		353	16.9
20	20	26,128	-57.8		355	19.4
15	12	27,960	-56.5			

Standard pressure surface (mb.)	GRAND JUNCTION, COLO. (857 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,474	- 4.9	73	119	3.7
1,000	31	245				
950	31	653				
900	31	1,085				
850	31	1,541			120	5.8
800	31	2,024	- 2.2	56	124	3.7
750	31	2,535	- 3.7	54	201	1.2
700	31	3,078	- 5.5	50	298	4.5
650	31	3,655	- 8.0	45	312	9.1
600	31	4,275	-11.8	43	310	12.8
550	31	4,935	-16.0	41	311	13.6
500	31	5,647	-20.8	41	299	15.7
450	31	6,415	-26.2	38	293	14.6
400	31	7,260	-32.7	39	295	16.7
350	31	8,187	-39.5		306	18.7
300	31	9,226	-46.9		311	24.3
250	31	10,415	-53.7		307	26.6
200	31	11,834	-57.6		300	30.5
175	31	12,675	-58.6		297	30.3
150	31	13,643	-58.9		290	31.9
125	30	14,777	-60.5		289	29.9
100	29	16,163	-62.6		292	28.2
80	29	17,535	-63.3		295	22.7
60	29	19,305	-62.6		304	15.7
50	28	20,426	-62.6		314	12.8
40	28	21,800	-62.6		327	11.3
30	25	23,576	-61.4		354	10.7
25	22	24,717	-60.6		5	8.9
20	20	26,120	-59.3		[illegible]	8.5
15	12	27,936	-56.5			

Standard pressure surface (mb.)	GREAT FALLS, MONT. (890 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,123	- 1.8	59	238	8.4
1,000	31	188				
950	31	603				
900	31	1,037				
850	31	1,495	.6	51	254	16.7
800	31	1,980	- 1.4	52	274	17.7
750	31	2,486	- 4.4	54	284	18.7
700	31	3,033	- 7.6	54	294	22.2
650	31	3,600	-10.9	52	303	23.5
600	31	4,219	-14.4	46	304	25.3
550	31	4,867	-18.5	49	302	25.8
500	31	5,580	-23.2	49	[illegible]	28.2
450	31	6,333	-28.5	46	309	29.7
400	31	7,180	-34.6	12	307	34.2
350	31	8,100	-41.3		312	36.1
300	31	9,130	-48.7		314	41.4
250	31	10,309	-55.8		315	47.2
200	31	11,714	-59.5		313	42.9
175	31	12,550	-58.8		309	42.6
150	30	13,518	-56.7		300	36.9
125	30	14,672	-57.7		305	33.2
100	30	16,075	-58.9		306	29.9
80	29	17,473	-59.7		310	23.9
60	28	19,276	-59.9		320	18.7
50	27	20,410	-59.9		323	14.4
40	26	21,803	-59.9		341	13.6
30	21	23,627	-59.2		359	10.1
25	20	24,774	-59.5		6	12.2
20	18	26,191	-59.2		54	5.8
15	12	28,035	-59.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

DECEMBER 1960

Standard pressure surface (mb)	GREEN BAY, WIS. (994 MB.)						GREENSBORO, N. C. (991 MB.)						HILO, HAWAII (1015 MB.)						INTERNAT. FALLS, MINN. (975 MB.)						JACKASS FLATS, NEV. (896 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	210	- 8.5	81	282	6.0	31	273	- 2.7	74	280	2.5	31	11	19.3	84	231	6.0	31	360	-17.1	71	264	2.7	31	1,100	2.6	50	33	8.9
1,000--	30	161					31	203					31	141	21.6	76	232	4.5	31	165					31	206				
950----	30	558	- 9.4	69	288	13.8	31	615	1.4	46	296	9.5	31	585	18.9	77	115	2.5	31	553	-14.5	68	278	6.2	31	625				
900----	30	976	- 9.9	65	288	15.0	31	1,048	.5	45	293	13.0	31	1,049	15.8	78	98	3.5	31	964	-12.0	64	291	12.6	31	1,068				
850----	30	1,417	-10.1	58	288	17.5	31	1,506	- .9	46	288	15.9	31	1,532	12.6	80	87	3.7	31	1,402	-11.0	55	295	17.7	31	1,536	6.0	35	35	8.9
800----	30	1,884	-10.4	48	283	19.4	31	1,989	- 1.8	36	281	18.7	31	2,041	10.9	62	95	3.1	31	1,867	-11.6	51	300	20.6	31	2,031	3.6	33	42	7.2
750----	30	2,381	-11.8	42	287	23.1	31	2,503	- 3.0	36	279	23.9	31	2,580	9.8	41	107	2.3	31	2,359	-12.4	50	307	23.5	31	2,548	1.0	32	24	4.7
700----	30	2,906	-13.8	39	287	26.0	31	3,046	- 5.3	37	275	28.4	31	3,151	7.4	28	183	1.0	31	2,886	-14.3	48	308	27.2	31	3,104	- 2.4	33	351	6.8
650----	30	3,463	-16.6	38	285	27.8	31	3,624	- 8.2	38	274	32.3	31	3,756	4.2		346	.8	31	3,442	-16.9	45	308	30.9	31	3,684	- 5.4	32	336	9.5
600----	30	4,064	-19.9	39	286	32.4	31	4,244	-11.2	36	273	38.3	31	4,406	.5		307	4.7	31	4,043	-20.3	44	309	35.2	31	4,313	- 9.0		333	10.5
550----	30	4,705	-23.6		284	37.1	31	4,906	-15.0	36	272	42.2	31	5,095	- 3.5		301	7.0	31	4,676	-23.8	42	308	39.2	31	4,973	-13.3		324	11.3
500----	30	5,396	-27.8		282	42.4	31	5,622	-19.4	35	272	49.0	31	5,847	- 8.7		288	11.7	31	5,373	-28.4	42	307	42.6	31	5,701	-18.5		340	14.2
450----	30	6,143	-32.7		282	48.2	31	6,396	-24.4		270	55.2	31	6,649	-14.9		294	16.5	31	6,115	-33.5		308	46.2	31	6,470	-24.2		334	15.5
400----	30	6,966	-38.1		279	51.9	31	7,246	-30.5		271	59.8	31	7,537	-21.6		294	23.7	31	6,939	-39.2		309	51.7	31	7,329	-30.5		326	18.1
350----	30	7,873	-44.2		283	53.6	31	8,182	-37.3		272	66.1	31	8,507	-28.9		291	26.8	31	7,843	-45.1		308	56.2	31	8,265	-37.2		326	21.8
300----	30	8,894	-50.1		283	57.7	31	9,230	-44.6		271	71.1	31	9,592	-37.2		289	34.6	31	8,860	-50.5		308	60.2	31	9,313	-44.9		331	24.1
250----	29	10,065	-54.7		281	56.5	31	10,431	-51.8		275	76.6	31	10,828	-45.7		282	45.1	31	10,037	-54.3		306	60.6	31	10,511	-52.5		324	28.2
200----	29	11,488	-55.4		282	56.5	31	11,858	-57.3		273	82.4	29	12,291	-54.3		279	49.7	31	11,463	-54.7		304	58.3	31	11,936	-57.2		305	32.4
175----	29	12,342	-54.6		283	52.7	31	12,699	-59.2		273	75.2	28	13,133	-59.0		289	46.4	31	12,319	-53.9		302	51.9	31	12,778	-58.4		295	32.8
150----	29	13,327	-55.0		281	49.9	31	13,663	-59.8		271	69.2	28	14,088	-64.4		283	39.1	31	13,310	-53.8		301	46.4	31	13,745	-59.5		291	33.2
125----	29	14,490	-55.8		280	44.3	31	14,798	-61.4		269	63.0	27	15,189	-70.3		286	35.9	31	14,480	-54.4		305	42.2	31	14,881	-61.1		291	32.3
100----	29	15,906	-57.6		279	39.8	30	16,178	-63.9		270	52.7	26	16,497	-75.6		294	26.6	29	15,914	-55.2		301	37.1	31	16,260	-63.4		292	25.6
80-----	28	17,305	-58.7		278	37.3	30	17,541	-64.9		271	41.8	25	17,779	-76.9		315	10.7	29	17,333	-57.0		303	31.1	28	17,625	-64.6		295	18.8
60-----	28	19,108	-59.7		280	28.8	30	19,305	-63.4		269	31.1	23	19,463	-68.6		350	1.2	22	19,165	-57.9		304	27.6	26	19,375	-63.9		285	12.8
50-----	27	20,256	-59.3		281	23.9	30	20,429	-61.8		271	22.7	23	20,569	-64.1		30	2.3	18	20,325	-57.5		307	23.9	24	20,494	-62.9		286	11.1
40-----	26	21,644	-59.8		273	19.8	30	21,816	-59.7		273	15.7	22	21,947	-60.9		52	5.1	13	21,778	-57.0		316	16.3	20	21,873	-62.3		304	10.1
30-----	20	23,422	-59.6		281	20.2	27	23,624	-58.4		266	13.8	22	23,749	-58.2		357	7.2	7	23,618	-57.4				18	23,660	-61.9		357	6.0
25-----	18	24,567	-59.2		265	15.7	25	24,771	-57.4		271	12.2	21	24,896	-56.6		330	5.4	5	24,685	-57.6				17	24,792	-61.5		16	9.5
20-----	15	25,942	-58.7		262	25.5	23	26,185	-55.5		270	14.8	18	26,324	-54.6										10	26,188	-59.8			
15-----							15	28,020	-52.6				15	28,175	-52.3										5	28,008	-57.6			

Standard pressure surface (mb)	JACKSON, MISS. (1013 MB.)						JACKSONVILLE, FLA. (1024 MB.)						JOHNSTON IS., PACIFIC AREA (1014 MB.)						KING SALMON, ALASKA (996 MB.)						KOTZEBUE, ALASKA (1006 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	101	3.9	83	47	1.2	31	6	4.4	85	325	8.2	31	3	24.9	77	69	11.9	31	15	- 1.8	85	107	5.1	31	5	-11.1	75	89	10.5
1,000--	31	199	5.0	72	40	1.9	31	199	9.0	61	360	7.6	31	124	23.9	78	76	13.8	31	-15			100	6.4	31	49			97	14.2
950----	31	617	5.0	67	200	4.3	31	622	8.5	56	358	3.3	31	572	20.5	79	80	16.1	31	395	- 1.0	71	129	10.3	31	446	- 7.8	67	108	18.5
900----	31	1,060	4.9	60	238	7.2	31	1,070	7.5	50	279	4.7	31	1,037	17.2	78	85	15.3	31	825	- 3.2	71	140	12.2	31	866	- 8.3	64	126	16.5
850----	31	1,526	4.6	53	268	8.4	31	1,540	6.4	40	270	10.1	31	1,523	14.4	70	88	13.2	31	1,276	- 5.4	66	151	13.2	31	1,310	- 8.8	63	130	14.8
800----	31	2,019	3.2	47	272	12.4	31	2,037	4.9	35	280	11.7	31	2,036	12.4	50	82	11.3	31	1,750	- 7.8	60	156	16.5	31	1,779	-10.6	57	142	13.4
750----	31	2,540	1.2	44	271	16.3	31	2,557	3.1		279	15.2	31	2,576	11.4	33	79	7.8	31	2,250	-10.7	57	152	18.1	31	2,270	-13.1	58	146	13.8
700----	31	3,093	- 1.5	43	268	20.4	31	3,118	.7		282	21.6	31	3,152	9.1		72	6.2	31	2,777	-14.0	56	155	18.5	31	2,797	-16.0	55	143	13.2
650----	31	3,678	- 4.2	41	271	23.1	31	3,706	- 2.1		277	25.8	31	3,758	6.2		65	3.5	31	3,333	-17.4	58	160	18.8	31	3,348	-19.0	55	146	14.8
600----	31	4,309	- 7.6	39	267	28.2	31	4,344	- 5.7		275	30.7	31	4,415	2.6		32	4.3	31	3,933	-21.1	54	164	19.6	31	3,944	-22.6	55	156	14.8
550----	31	4,973	-11.7	38	270	35.0	31	5,011	- 9.8		275	34.2	31	5,105	- 1.8		27	3.3	31	4,565	-25.2	51	171	18.3	31	4,571	-26.5	52	165	15.0
500----	31	5,705	-16.6		269	37.7	30	5,752	-14.4		275	38.5	31	5,866	- 6.5		348	4.9	31	5,257	-29.8	47	168	19.0	31	5,261	-31.1	50	176	17.1
450----	31	6,482	-21.6		272	42.2	30	6,532	-19.6		271	41.8	31	6,672	-12.2		315	8.0	31	5,996	-34.8		173	22.2	31	5,994	-36.3	46	176	16.9
400----	31	7,348	-27.9		275	49.5	30	7,408	-25.6	38	275	54.2	31	7,573	-18.7		310	10.9	31	6,814	-40.3		178	24.5	31	6,809	-42.1		171	19.6
350----	31	8,295	-34.6		272	56.0	30	8,363	-32.6	39	272	59.7	31	8,555	-25.8		312	14.0	31	7,714	-46.4		180	27.4	31	7,699	-48.6		174	20.8
300----	31	9,356	-42.1		271	62.8	30	9,432	-40.3		274	68.6	31	9,655	-33.6		303	17.5	31	8,725	-52.0		183	29.0	31	8,700	-54.2		176	22.5
250----	31	10,567	-50.0		270	72.9	30	10,652	-48.7		271	71.5	31	10,911	-42.5		301	22.7	31	9,898	-54.1		191	26.2	31	9,861	-56.5		185	22.5
200----	31	11,997	-58.3		273	74.6	30	12,088	-57.6		269	72.7	31	12,386	-52.8		305	26.8	31	11,339	-51.4		190	25.6	31	11,289	-53.1		185	21.6
175----	31	12,832	-60.5		275	68.6	30	12,924	-61.0		268	73.6	31	13,236	-59.0		302	26.6	31	12,210	-50.0		199	23.1	28	12,151	-52.0		195	21.2
150----	31	13,787	-62.0		270	68.0	29	13,872	-62.7		269	69.2	31	14,189	-65.6		307	24.3	31	13,218	-49.6		198	22.3	28	13,152	-51.1		200	23.1
125----	31	14,910	-64.0		268	56.7	29	14,989	-65.3		265	66.6	30	15,280	-72.5		313	22.3	29	14,415	-48.6		196	20.4	27	14,337	-50.0		208	20.2
100----	31	16,266	-66.9		270	47.6	29	16,338	-68.4		268	49.9	29	16,571	-79.1		313	15.3	29	15,883	-48.6		197	19.4	27	15,797	-49.7		213	22.5
80-----	30	17,606	-68.1		272	35.6	29	17,670	-69.4		273	36.1	27	17,825	-80.6		351	11.7	25	17,352	-49.0		203	16.7	26	17,260	-48.9		215	22.0
60-----	29	19,337	-65.8		273	22.5	29	19,400	-65.8		271	24.5	24	19,484	-69.8		72	6.8	17	19,228	-49.3		205	11.7	23	19,142	-49.0		228	22.2
50-----	28	20,450	-63.8		270	16.9	28	20,519	-63.0		265	20.4	23	20,586	-64.5		93	8.7	18	20,426	-49.3		200	9.9	22	20,340	-49.3		235	21.2
40-----	25	21,829	-60.6		270	10.9	25	21,905	-59.6		275	20.6	23	21,961	-61.0		95	11.5	18	21,890	-49.3		157	6.2	21	21,800	-49.6		246	21.8
30-----	25	23,627	-58.7		268	15.7	23	23,714	-56.9		269	26.0	23	23,766	-57.1		87	10.7	18	23,779	-48.8		147	1.7	19	23,679	-50.9		254	24.9
25-----	24	24,771	-57.6		270	18.5	23	24,875	-55.5		270	29.0	19	24,937	-54.5		59	5.6	17	24,978	-48.6		33	3.1	18	24,857	-51.2		264	28.0
20-----	22	26,191	-55.8		271	21.6	21	26,295	-54.2		270	33.4	17	26,371	-51.7		306	1.4	12	26,436	-49.2		33	4.5	17	26,307	-51.0		266	33.4
15-----	15	28,045	-52.7				16	28,178	-50.6				8	28,248	-49.3				8	28,311	-49.6				11	28,261	-48.9			
10-----	5	30,780	-41.8																											

Standard pressure surface (mb)	LAKE CHARLES, LA. (1023 MB.)						LANDER, WYO. (832 MB.)						LAS VEGAS, NEV. (945 MB.)						LIHUE, HAWAII (1012 MB.)						LITTLE ROCK, ARK. (1016 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	5	7.1	92	51	4.5	31	1,696	- 9.6	73	231	1.9	30	660	2.8	64	259	4.1	31	36	20.5	84	8	1.4	30	79	0.4	86	340	1.4
1,000--	30	193	8.7	78	88	7.2	31	249					30	201					31	143	21.1	78	26	2.7	30	203	2.3	69	327	1.0
950----	30	620	8.4	74	174	3.1	31	653					30	618					31	588	18.0	81	62	5.4	30	619	1.8	61	256	2.7
900----	30	1,066	7.5	65	232	6.2	31	1,079					30	1,064	7.2	41	7	6.4	31	1,048	14.7	84	72	3.7	30	1,055	2.4	54	266	7.8
850----	30	1,537	6.9	61	248	9.1	31	1,527					30	1,532	4.9	40	7	10.1	31	1,530	12.2	78	137	1.7	30	1,517	2.3	54	277	11.1
800----	30	2,034	5.2	57	245	13.6	31	2,000	- 3.1	50	243	1.6	30	2,025	2.6	39	14	10.1	31	2,038	10.7	57	183	1.0	30	2,006	.9	51	273	14.8
750----	30	2,564	3.1	49	259	16.7	31	2,509	- 3.1	39	298	7.4	30	2,542	.5	37	19	8.0	31	2,576	9.0	39	243	3.3	30	2,522	- .8	48	282	17.5
700----	30	3,118	.7	43	267	23.5	31	3,056	- 5.8	38	305	12.6	30	3,096	- 2.4	34	353	8.5	31	3,144	6.5		260	5.6	29	3,076	- 3.1	45	276	21.6
650----	30	3,709	- 2.0	40	261	23.7	31	3,624	- 8.9	36	309	15.2	30	3,675	- 5.9	33	342	7.4	31	3,745	3.7		270	9.1	29	3,653	- 6.0	42	279	25.5
600----	30	4,344	- 5.1		265	26.6	31	4,249	-12.9	35	309	22.2	30	4,304	- 9.6	32	337	9.1	31	4,394	- .4		268	10.5	29	4,283	- 9.6	40	276	26.4
550----	30	5,018	- 9.4		269	29.5	31	4,898	-17.1	35	314	25.1	30	4,963	-14.1	31	341	10.3	31	5,081	- 4.8	27	278	13.8	29	4,943	-13.6	35	276	28.8
500----	30	5,755	-14.3		269	33.6	31	5,616	-21.7		309	25.6	30	5,687	-19.3		336	11.5	31	5,829	- 9.7		281	19.6	29	5,670	-18.4	33	279	34.2
450----	30	6,541	-19.4		267	40.0	31	6,380	-27.2	32	307	26.6	30	6,455	-24.8		350	9.7	31	6,629	-15.5		284	23.9	29	6,440	-24.1	32	278	37.7
400----	30	7,415	-25.4		266	45.3	31	7,223	-33.6		308	28.6	30	7,309	-30.8		345	10.9	31	7,513	-22.2		288	29.1	29	7,299	-29.8	32	275	42.0
350----	30	8,370	-32.5		268	54.6	31	8,146	-40.8		310	32.1	30	8,244	-37.6		332	15.5	31	8,481	-29.7		291	31.5	29	8,238	-36.3			
300----	30	9,440	-40.1		268	62.8	31	9,177	-48.4		309	35.4	30	9,291	-44.9		331	17.3	31	9,562	-37.8		287	36.1	29	9,291	-43.7			
250----	30	10,662	-48.8		269	74.6	31	10,356	-56.2		307	41.4	30	10,491	-51.7		323	23.9	31	10,795	-46.6		292	43.5	29	10,496	-51.3			
200----	30	12,097	-58.2		270	79.7	31	11,759	-60.0		306	39.2	29	11,925	-56.8		295	29.0	31	12,250	-54.7		283	50.9	29	11,923	-58.0			
175----	30	12,929	-62.3		270	75.4	31	12,593	-59.3		298	37.5	29	12,767	-58.4		291	34.4	31	13,096	-59.2		286	49.2	29	12,759	-60.2			
150----	30	13,878	-63.8		268	70.7	31	13,561	-58.5		295	34.4	29	13,735	-59.5		290	31.7	31	14,052	-63.7		292	47.0	29	13,718	-61.1			
125----	28	14,998	-66.0		266	59.7	31	14,703	-59.9		297	30.9	29	14,870	-61.8		288	29.5	31	15,157	-68.8		288	37.3	29	14,846	-62.8			
100----	27	16,350	-68.6		268	47.8	31	16,095	-61.2		300	27.2	29	16,241	-64.3		288	25.1	30	16,473	-75.0		281	32.1	29	16,212	-65.0			
80-----	27	17,678	-70.6		268	33.8	31	17,476	-62.4		298	23.7	27	17,606	-65.5		287	20.4	27	17,760	-75.4		284	18.8	28	17,565	-65.9			
60-----	24	19 397	-67.4		270	24.1	30	19,252	-62.3		309	18.1	27	19,358	-64.9		301	11.7	23	19,438	-68.4		303	5.6	25	19,317	-64.6			
50-----	24	20,504	-64.4		269	21.6	29	20,384	-61.9		320	15.3	27	20,473	-63.2		303	9.5	24	20,544	-63.7		317	1.4	25	20,433	-63.2			
40-----	23	21,876	-63.0		261	18.1	26	21,771	-61.1		354	11.3	27	21,849	-62.5		343	8.0	23	21,925	-60.6		122	1.4	23	21,808	-61.7			
30-----	22	23,673	-58.0		256	24.1	23	23,580	-60.2		34	9.3	25	23,636	-60.8		13	7.4	23	23,726	-57.7		307	2.1	23	23,598	-59.4			
25-----	22	24,826	-56.8		257	29.7	19	24,717	-60.3		52	10.5	24	24,779	-59.5		14	9.3	20	24,880	-56.6		299	5.6	19	24,721	-58.5			
20-----	17	26,255	-55.1		259	36.3	15	26,123	-59.2		53	11.3	21	26,173	-58.0		348	7.6	17	26,301	-54.5		287	8.7	17	26,126	-56.9			
15-----	9	28,114	-51.1				8	27,929	-58.3				8	28,017	-54.0				12	28,152	-51.4				11	27,983	-54.4			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

DECEMBER 1960

McGRATH, ALASKA (992 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	103	-13.6	75		0.0
1,000--	31	39				
950----	31	440	- 8.6	67	88	10.9
900----	31	857	- 4.6	65	127	16.7
850----	31	1,308	- 5.1	60	148	17.9
800----	31	1,782	- 7.8	60	158	16.3
750----	31	2,284	-10.8	59	166	15.3
700----	31	2,809	-14.0	59	173	17.5
650----	31	3,367	-17.5	57	161	16.5
600----	31	3,964	-21.4	53	171	15.2
550----	31	4,599	-25.5	48	179	16.7
500----	31	5,286	-30.3	44	176	18.5
450----	31	6,027	-35.7		179	19.2
400----	31	6,838	-41.6		176	20.2
350----	31	7,733	-47.5		180	21.0
300----	31	8,740	-52.8		184	22.5
250----	31	9,911	-54.7		189	22.3
200----	31	11,347	-52.3		192	21.4
175----	31	12,214	-51.2		196	20.2
150----	31	13,220	-50.0		198	19.4
125----	31	14,413	-49.4		203	18.8
100----	31	15,878	-49.1		205	17.3
80-----	31	17,343	-49.1		212	16.9
60-----	31	19,232	-49.2		227	12.8
50-----	31	20,428	-49.1		234	10.9
40-----	30	21,892	-48.9		242	9.9
30-----	28	23,789	-48.8		279	7.4
25-----	28	24,986	-49.2		298	8.5
20-----	27	26,448	-49.6		320	13.4
15-----	21	28,335	-50.1		321	14.6

MEDFORD, OREG. (976 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	401	0.2	95		0.0
1,000--	31	213				
950----	31	627	3.1	76		.0
900----	31	1,068	4.9	59	124	4.7
850----	31	1,534	4.0	51	154	6.0
800----	31	2,026	2.2	48	201	4.3
750----	31	2,541	.0	44	262	5.2
700----	31	3,094	- 2.7		275	9.3
650----	31	3,672	- 5.7	34	281	12.4
600----	31	4,303	- 9.5	35	279	17.1
550----	31	4,961	-13.9	39	288	15.7
500----	31	5,687	-18.7	44	282	15.0
450----	31	6,457	-24.2	44	280	12.2
400----	31	7,315	-30.7	45	298	16.3
350----	31	8,250	-37.8		296	17.3
300----	31	9,294	-46.3		282	15.2
250----	30	10,476	-55.1		274	19.6
200----	30	11,880	-60.8		272	26.6
175----	30	12,710	-60.8		276	24.7
150----	30	13,671	-59.9		276	25.5
125----	29	14,807	-60.7		277	25.5
100----	29	16,192	-62.0		279	21.2
80-----	29	17,568	-62.6		280	16.1
60-----	29	19,344	-62.3		301	9.5
50-----	30	20,470	-61.6		329	6.0
40-----	28	21,859	-60.9		356	7.2
30-----	27	23,646	-60.0		34	9.9
25-----	26	24,784	-59.5		43	12.0
20-----	24	26,183	-59.2		38	16.7
15-----	15	28,023	-58.1		36	17.3

MIAMI, FLA. (1021 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	14.9	80	360	4.3
1,000--	31	177	16.3	73	25	8.2
950----	31	613	14.4	73	54	8.9
900----	31	1,069	11.4	71	65	7.2
850----	31	1,545	8.8	64	42	1.9
800----	31	2,046	7.9	45	303	2.1
750----	31	2,580	7.2		274	6.8
700----	31	3,144	4.8		275	11.7
650----	31	3,739	1.7		277	15.2
600----	31	4,386	- 1.8		278	20.2
550----	31	5,065	- 6.2		277	24.3
500----	31	5,813	-11.0		276	30.9
450----	31	6,609	-16.2		273	33.0
400----	31	7,491	-22.9	30	271	42.2
350----	31	8,457	-29.9		270	47.2
300----	31	9,538	-38.3		267	52.3
250----	31	10,766	-48.1		265	57.3
200----	31	12,202	-58.5		261	62.6
175----	31	13,033	-62.7		264	56.9
150----	31	13,976	-65.7		264	59.3
125----	31	15,073	-69.0		265	48.2
100----	29	16,393	-73.3		263	41.6
80-----	29	17,692	-74.4		264	29.3
60-----	27	19,388	-68.7		264	14.4
50-----	26	20,488	-65.3		269	13.0
40-----	25	21,863	-60.7		268	11.3
30-----	23	23,671	-57.0		284	11.5
25-----	21	24,825	-55.5		283	10.7
20-----	20	26,254	-53.1		281	13.8
15-----	18	28,126	-50.0		274	21.8

MIDLAND, TEX. (921 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	871	0.6	85	355	1.6
1,000--	31	206				
950----	31	620				
900----	31	1,059	3.2	69	354	1.0
850----	31	1,522	3.2	61	301	1.7
800----	31	2,015	3.7	54	268	5.8
750----	31	2,535	2.4	50	265	10.5
700----	31	3,094	.1	44	266	15.2
650----	31	3,679	- 3.2	41	258	19.6
600----	31	4,314	- 6.6	36	260	25.8
550----	31	4,980	-11.2		264	28.4
500----	31	5,713	-16.2	33	261	30.7
450----	30	6,491	-21.9		261	33.0
400----	30	7,355	-28.1		257	37.7
350----	30	8,302	-34.9		260	46.2
300----	30	9,362	-42.1		259	57.7
250----	30	10,575	-50.0		258	70.7
200----	30	12,008	-58.4		258	71.7
175----	30	12,843	-61.3		261	66.8
150----	29	13,798	-62.3		260	62.4
125----	28	14,922	-64.4		263	51.9
100----	28	16,280	-66.6		271	38.9
80-----	27	17,617	-68.1		270	27.6
60-----	23	19,358	-65.5		275	20.2
50-----	21	20,464	-64.1		280	17.7
40-----	16	21,825	-62.3		278	17.1
30-----	15	23,601	-60.0		272	20.6
25-----	14	24,744	-58.7		264	28.6
20-----	12	26,141	-56.7		264	42.2
15-----	5	27,976	-48.7			

MONTGOMERY, ALA. (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	61	2.7	73	1	1.0
1,000--	31	204	5.6	61	5	2.5
950----	31	625	5.9	57	282	3.9
900----	31	1,067	4.9	54	281	7.4
850----	31	1,533	4.5	47	281	12.0
800----	31	2,025	3.2	43	285	15.5
750----	31	2,548	1.3	41	280	19.0
700----	31	3,100	- .9		274	22.9
650----	31	3,687	- 4.0		274	28.0
600----	31	4,318	- 7.2		271	32.6
550----	31	4,986	-11.3		270	35.8
500----	31	5,716	-16.0		271	39.4
450----	31	6,495	-21.3		270	49.9
400----	31	7,362	-27.3		269	54.4
350----	31	8,311	-34.1	37	268	63.7
300----	31	9,374	-41.7		267	73.6
250----	31	10,588	-49.9		271	81.0
200----	30	12,023	-57.3		272	88.0
175----	30	12,861	-59.7		269	84.1
150----	30	13,820	-61.4		267	75.4
125----	30	14,944	-64.2		269	60.4
100----	30	16,299	-67.3		266	55.0
80-----	29	17,639	-68.2		266	39.2
60-----	28	19,369	-65.7		266	32.1
50-----	28	20,483	-63.6		264	25.3
40-----	25	21,868	-60.8		261	21.4
30-----	24	23,664	-58.1		261	23.1
25-----	18	24,808	-56.6		265	25.3
20-----	18	26,228	-55.0		263	29.7
15-----	11	28,049	-54.0			

NANTUCKET, MASS. (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	14	- 1.4	74	298	5.8
1,000--	31	153	- .7	67	283	10.7
950----	31	560	- 3.0	66	292	12.0
900----	31	989	- 4.4	57	282	13.2
850----	31	1,438	- 5.7	52	274	16.1
800----	31	1,913	- 6.6	46	270	18.8
750----	31	2,413	- 8.1	43	265	22.9
700----	31	2,952	- 9.7	39	265	27.8
650----	31	3,515	-12.2	38	265	31.9
600----	31	4,130	-15.2	36	265	38.9
550----	31	4,778	-18.5	37	267	40.2
500----	31	5,489	-23.2	35	263	44.7
450----	31	6,244	-28.5		262	44.7
400----	31	7,086	-34.4		264	42.2
350----	31	8,008	-40.9		260	42.6
300----	31	9,043	-47.3		264	46.8
250----	31	10,233	-53.0		262	45.5
200----	30	11,661	-55.0		268	49.0
175----	30	12,514	-54.9		264	47.0
150----	30	13,497	-56.1		259	47.2
125----	30	14,653	-57.4		258	42.0
100----	30	16,059	-58.7		257	36.5
80-----	29	17,459	-59.8		253	29.9
60-----	28	19,263	-59.5		249	23.3
50-----	28	20,406	-58.8		248	19.2
40-----	26	21,800	-59.0		251	13.4
30-----	25	23,617	-57.5		259	8.0
25-----	25	24,770	-57.0		269	6.4
20-----	22	26,192	-55.3		254	8.7
15-----	20	28,036	-54.1		267	10.5
10-----	8	30,652	-50.1			

NASHVILLE, TENN. (1004 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	177	- 1.6	77	329	0.8
1,000--	31	204			338	1.2
950----	31	611	- .3	63	251	7.8
900----	31	1,046	.1	57	268	10.3
850----	31	1,503	- .5	45	272	14.4
800----	31	1,987	- 2.1	41	281	18.5
750----	31	2,497	- 3.6	35	280	22.0
700----	31	3,041	- 5.8	34	280	26.4
650----	31	3,612	- 8.5		280	29.3
600----	31	4,236	-11.8		278	33.2
550----	31	4,891	-15.7		276	38.1
500----	31	5,611	-19.9		276	42.7
450----	31	6,376	-25.3		269	46.0
400----	31	7,231	-31.4		267	51.7
350----	31	8,164	-37.9		269	61.4
300----	31	9,210	-45.1		267	66.1
250----	31	10,411	-51.8		270	75.4
200----	31	11,837	-57.7		271	79.1
175----	31	12,677	-59.5		270	71.9
150----	31	13,640	-60.2		271	70.3
125----	31	14,774	-61.3		270	58.9
100----	30	16,158	-64.0		269	50.7
80-----	29	17,522	-65.3		273	41.4
60-----	28	19,283	-64.2		277	27.8
50-----	27	20,399	-63.0		274	21.8
40-----	26	21,775	-61.2		273	16.5
30-----	23	23,564	-59.0		267	20.0
25-----	23	24,711	-58.0		263	18.5
20-----	21	26,109	-56.4		262	16.9
15-----	14	27,980	-53.2			
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N. Y. INT. AP, IDLEWILD (1021 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	- 2.3	62	303	8.4
1,000--	31	170	- 2.4	59	299	10.9
950----	31	573	- 4.1	55	295	12.6
900----	31	1,001	- 5.2	51	295	15.0
850----	31	1,450	- 5.9	45	291	16.3
800----	31	1,923	- 7.3	44	280	19.8
750----	31	2,423	- 8.7	46	272	25.8
700----	31	2,957	-10.6	43	271	30.3
650----	31	3,521	-13.0	44	273	35.4
600----	31	4,132	-15.8	41	268	40.6
550----	31	4,779	-19.1	37	266	43.9
500----	31	5,487	-23.6	36	267	48.2
450----	31	6,242	-28.9		267	52.7
400----	31	7,081	-34.9		264	57.1
350----	31	8,000	-41.5		265	60.0
300----	31	9,032	-47.9		264	71.9
250----	31	10,220	-53.0		269	69.8
200----	31	11,651	-55.2		271	67.2
175----	31	12,503	-55.2		269	64.9
150----	31	13,484	-56.5		267	60.4
125----	31	14,639	-57.9		265	54.8
100----	31	16,041	-59.6		265	49.2
80-----	30	17,429	-59.8		266	38.9
60-----	28	19,228	-60.5		264	28.8
50-----	28	20,366	-59.1		263	24.1
40-----	28	21,769	-58.3		261	20.2
30-----	26	23,583	-57.6		264	16.7
25-----	26	24,735	-56.9		272	13.4
20-----	23	26,149	-55.9		265	9.5
15-----	13	27,990	-54.5			
10-----						

NOME, ALASKA (1001 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	- 6.6	76	70	10.5
1,000--	31	10			86	13.4
950----	31	413	- 6.2	69	106	18.1
900----	31	834	- 7.2	71	122	17.7
850----	31	1,279	- 8.1	72	127	15.5
800----	31	1,749	-10.0	67	130	15.9
750----	31	2,242	-12.6	65	139	16.1
700----	31	2,769	-15.4	58	146	17.5
650----	31	3,324	-18.7	57	146	17.9
600----	31	3,917	-22.5	56	147	18.1
550----	31	4,547	-26.7	53	146	17.9
500----	31	5,233	-31.3	47	147	19.6
450----	31	5,966	-36.4	44	145	20.2
400----	31	6,780	-42.4		153	22.0
350----	31	7,670	-48.5		158	22.9
300----	31	8,670	-54.0		164	22.9
250----	31	9,834	-55.8		169	24.9
200----	31	11,266	-52.7		179	22.5
175----	31	12,133	-50.8		185	20.4
150----	31	13,138	-50.0		186	19.8
125----	31	14,331	-49.3		192	19.4
100----	31	15,795	-48.7		196	19.6
80-----	31	17,263	-48.3		203	19.0
60-----	31	19,157	-48.1		213	17.3
50-----	31	20,359	-48.0		221	14.8
40-----	30	21,827	-48.1		230	13.0
30-----	27	23,724	-48.3		238	12.4
25-----	27	24,924	-48.6		255	14.2
20-----	25	26,387	-48.9		274	19.6
15-----	22	28,301	-48.8		284	22.2
10-----	9	30,795	-54.1			

NORFOLK, VA. (1023 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	9	- 0.7	73	308	3.3
1,000--	31	193	1.9	52	303	6.4
950----	31	603	.7	48	312	10.1
900----	31	1,039	- .6	43	291	12.6
850----	31	1,495	- 1.7	40	280	16.1
800----	31	1,977	- 3.0	41	276	21.8
750----	31	2,484	- 3.7	38	273	27.6
700----	31	3,032	- 5.6	36	269	31.7
650----	31	3,604	- 8.4	37	269	36.3
600----	31	4,228	-11.7	33	268	39.2
550----	31	4,883	-15.4		266	43.5
500----	31	5,604	-20.2		268	48.6
450----	31	6,369	-25.5		268	52.3
400----	31	7,222	-31.5		267	59.1
350----	31	8,154	-38.2		270	61.4
300----	31	9,199	-45.3		272	61.6
250----	31	10,396	-52.4		273	71.5
200----	31	11,822	-57.3		278	73.1
175----	31	12,664	-58.5		276	69.2
150----	31	13,633	-58.9		274	66.6
125----	31	14,772	-60.6		270	60.2
100----	31	16,154	-62.9		268	51.3
80-----	31	17,526	-63.2		265	37.9
60-----	30	19,301	-62.1		264	27.4
50-----	30	20,432	-60.7		264	21.4
40-----	30	21,822	-59.8		263	17.1
30-----	29	23,628	-57.9		264	13.4
25-----	26	24,781	-56.4		269	14.2
20-----	25	26,199	-54.7		269	15.9
15-----	23	28,052	-52.2		264	28.6
10-----	8	30,693	-51.3			

NORTH PLATTE, NEBR. (922 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	848	- 6.9	78	317	3.9
1,000--	31	204				
950----	31	609				
900----	31	1,034	- 3.8	71	302	7.6
850----	31	1,488	- 1.2	56	311	11.3
800----	31	1,971	- 1.9	50	314	16.1
750----	31	2,481	- 3.9	50	310	19.6
700----	31	3,025	- 6.3	46	307	22.0
650----	31	3,598	- 9.2	42	302	22.2
600----	31	4,217	-13.0	41	298	24.9
550----	31	4,870	-17.1	35	296	29.7
500----	31	5,584	-21.8		292	31.1
450----	31	6,344	-27.2		286	34.0
400----	31	7,191	-33.5		281	36.1
350----	31	8,115	-40.6		276	36.7
300----	31	9,148	-48.3		283	38.1
250----	31	10,331	-55.2		276	39.2
200----	31	11,742	-58.2		273	41.2
175----	31	12,584	-57.8		278	42.0
150----	31	13,557	-58.0		277	40.6
125----	31	14,703	-59.5		282	39.8
100----	31	16,097	-60.9		284	32.3
80-----	31	17,480	-61.8		293	27.0
60-----	31	19,260	-61.9		296	19.4
50-----	31	20,386	-62.0		310	15.7
40-----	31	21,768	-61.3		321	11.7
30-----	26	23,543	-60.6		341	10.3
25-----	23	24,696	-59.9		331	7.6
20-----	19	26,094	-58.5		344	7.8
15-----	15	27,927	-57.3			

OAKLAND, CALIF. (1022 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	6.7	80	82	3.9
1,000--	31	187	8.6	70	81	3.9
950----	31	611	9.4	56	62	4.1
900----	31	1,059	8.8	45	20	1.9
850----	31	1,531	7.6	35	240	2.3
800----	31	2,029	5.4		264	2.5
750----	31	2,549	2.9		309	2.7
700----	31	3,110	- .1		300	4.7
650----	31	3,692	- 3.9		311	6.0
600----	31	4,326	- 8.0		308	8.4
550----	31	4,988	-12.5		312	11.9
500----	31	5,719	-17.5		304	14.4
450----	31	6,488	-23.2		308	16.5
400----	31	7,352	-29.7		297	19.0
350----	31	8,290	-36.8		305	22.9
300----	31	9,339	-45.1		310	25.1
250----	31	10,534	-53.8		301	26.8
200----	30	11,949	-59.6		295	33.2
175----	30	12,783	-60.3		296	31.9
150----	30	13,744	-60.6		289	30.7
125----	29	14,880	-62.2		289	28.6
100----	28	16,253	-64.4		287	22.5
80-----	28	17,617	-65.0		289	18.1
60-----	28	19,377	-63.6		301	9.3
50-----	26	20,498	-63.1		314	6.6
40-----	26	21,876	-61.9		338	5.6
30-----	21	23,673	-60.2		56	3.9
25-----	19	24,812	-59.5		22	4.9
20-----	14	26,225	-57.9			
15-----						

OKLAHOMA CITY, OKLA. (977 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	392	0.2	80	343	1.4
1,000--	31	205				
950----	31	617	1.3	68	334	1.9
900----	31	1,053	1.4	61	283	4.1
850----	31	1,515	2.0	55	285	8.5
800----	31	2,005	1.3	54	278	10.5
750----	31	2,525	- .6	53	276	12.8
700----	31	3,073	- 2.9	47	279	15.3
650----	31	3,655	- 5.9	42	279	18.3
600----	31	4,281	- 9.2	41	[illegible]	23.7
550----	31	4,943	-13.1	38	268	26.4
500----	31	5,670	-17.8	35	271	30.3
450----	31	6,444	-23.5	35	271	35.8
400----	31	7,302	-29.9	35	272	41.2
350----	31	8,240	-37.0		270	49.2
300----	31	9,290	-44.5		267	56.3
250----	31	10,491	-51.8		267	66.5
200----	31	11,915	-58.3		268	75.6
175----	31	12,751	-60.5		268	71.9
150----	30	13,712	-60.9		270	63.9
125----	29	14,848	-62.0		274	57.1
100----	27	16,218	-64.2		276	45.9
80-----	25	17,586	-65.4		277	34.0
60-----	23	19,326	-65.1		282	23.5
50-----	23	20,441	-63.5		283	19.4
40-----	21	21,815	-62.2		280	[illegible]
30-----	16	23,619	-60.0		281	10.7
25-----	10	24,785	-59.3			
20-----	6	26,236	-57.1			
15-----						

OMAHA, NEBR. (974 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	403	- 6.3	74	272	3.7
1,000--	31	191				
950----	31	595	- 5.2	69	287	6.4
900----	31	1,021	- 3.4	60	304	12.0
850----	31	1,473	- 3.4	57	303	15.5
800----	31	1,953	- 4.0	48	298	18.7
750----	31	2,458	- 6.0	45	299	20.2
700----	31	2,999	- 7.9	43	298	23.3
650----	31	3,566	-10.2	38	297	26.4
600----	31	4,186	-13.6	35	297	28.4
550----	31	4,836	-17.8	33	296	29.5
500----	31	5,549	-22.6		292	31.5
450----	31	6,305	-28.2		290	34.8
400----	31	7,149	-34.4		287	38.1
350----	31	8,069	-41.4		289	42.2
300----	31	9,099	-48.7		289	44.7
250----	31	10,278	-55.5		287	49.7
200----	30	11,697	-58.0		285	49.5
175----	30	12,538	-57.4		283	50.7
150----	30	13,512	-58.0		284	44.5
125----	30	14,658	-59.1		285	39.4
100----	29	16,051	-60.6		288	32.6
80-----	29	17,435	-61.9		290	28.4
60-----	28	19,222	-61.8		296	22.3
50-----	26	20,356	-61.4		301	19.6
40-----	25	21,737	-61.2		304	15.9
30-----	23	23,520	-60.0		306	10.7
25-----	20	24,692	-59.3		342	6.8
20-----	17	26,104	-58.8		317	2.1
15-----	8	27,954	-58.0			

PEORIA, ILL. (999 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	201	- 6.7	80	250	2.1
1,000--	31	189			301	2.9
950----	31	590	- 5.0	62	276	10.5
900----	31	1,017	- 4.6	56	284	13.8
850----	31	1,468	- 4.7	55	281	18.5
800----	31	1,944	- 5.7	50	277	22.0
750----	31	2,444	- 7.2	44	279	25.6
700----	31	2,985	- 9.2	39	280	29.0
650----	31	3,551	-11.8	36	282	32.8
600----	31	4,165	-14.8	35	281	36.3
550----	31	4,815	-18.5	36	278	39.1
500----	31	5,524	-23.0	38	279	41.6
450----	31	6,282	-28.3		281	43.5
400----	31	7,123	-34.3		280	49.0
350----	31	8,044	-41.0		278	55.2
300----	31	9,076	-47.8		275	60.6
250----	31	10,261	-54.4		270	66.3
200----	31	11,680	-57.1		274	68.6
175----	31	12,525	-56.6		276	65.3
150----	31	13,503	-57.0		274	62.4
125----	30	14,648	-58.2		276	54.6
100----	30	16,049	-59.7		277	47.0
80-----	29	17,441	-60.9		275	39.8
60-----	29	19,227	-61.1		276	29.9
50-----	28	20,356	-60.6		278	21.4
40-----	27	21,746	-60.3		275	17.1
30-----	21	23,560	-58.8		262	10.9
25-----	20	24,698	-58.7		254	11.9
20-----	18	26,112	-57.8		278	7.8
15-----	14	27,952	-56.5		16	6.8

See reference note at end of table

RAWINSONDE DATA

Average monthly values

DECEMBER 1960

Standard pressure surface (mb.)	PITTSBURGH, PA. (980 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	353	- 6.3	73	262	4.5
1,000	31	191				
950	31	596	- 5.7	66	254	12.0
900	31	1,017	- 7.2	66	270	18.7
850	31	1,462	- 8.0	63	274	22.0
800	31	1,933	- 8.7	56	272	26.0
750	31	2,432	- 9.7	49	273	31.5
700	31	2,964	-11.4	46	275	36.9
650	31	3,526	-13.9	46	275	41.2
600	31	4,135	-16.7	46	274	44.3
550	31	4,781	-20.6	44	272	46.0
500	31	5,484	-24.8		271	49.5
450	31	6,241	-29.8		273	49.4
400	31	7,075	-35.4		273	54.2
350	31	7,993	-41.4		271	54.0
300	31	9,025	-47.6		267	62.0
250	30	10,212	-53.3		272	61.0
200	30	11,637	-56.2		274	65.5
175	30	12,486	-56.6		272	66.3
150	30	13,464	-56.8		267	60.6
125	30	14,616	-58.2		270	55.4
100	30	16,015	-59.5		271	45.7
80	30	17,411	-60.0		270	35.2
60	30	19,203	-60.6		263	26.4
50	30	20,341	-59.6		262	19.4
40	28	21,740	-59.2		255	16.7
30	27	23,546	-58.1		244	17.5
25	25	24,681	-57.1		241	21.0
20	25	26,098	-55.7		240	20.4
15	18	27,941	-53.7			
10						
7						
5						
4						

Standard pressure surface (mb.)	PORTLAND, ME. (1016 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	20	- 8.7	79	278	4.9
1,000	31	143	- 5.4	60	275	6.4
950	31	545	- 6.2	57	286	11.3
900	31	968	- 7.6	56	287	11.3
850	31	1,412	- 8.5	53	282	15.5
800	31	1,882	- 9.4	49	276	19.4
750	31	2,378	-11.1	47	270	23.7
700	31	2,907	-13.2	45	266	27.6
650	31	3,467	-15.9	46	263	32.8
600	31	4,069	-18.7	46	262	37.1
550	31	4,711	-22.3	44	260	43.3
500	31	5,409	-26.2	39	261	48.2
450	31	6,155	-31.1	37	265	53.2
400	31	6,991	-36.6		262	57.9
350	31	7,904	-43.0		264	58.9
300	31	8,929	-49.0		259	65.3
250	31	10,116	-53.0		258	67.0
200	31	11,550	-53.5		258	62.2
175	31	12,410	-53.3		254	58.7
150	30	13,389	-54.2		253	56.7
125	30	14,555	-55.7		253	47.6
100	30	15,972	-56.9		251	42.2
80	27	17,376	-57.9		250	32.3
60	27	19,186	-58.4		245	25.6
50	27	20,333	-58.3		246	22.2
40	27	21,738	-58.2		246	20.4
30	25	23,556	-57.7		242	12.8
25	23	24,706	-56.8		236	13.0
20	20	26,111	-55.0		243	13.8
15	16	27,951	-52.5		250	19.4
10	9	30,617	-49.1			
7						
5						
4						

Standard pressure surface (mb.)	POINT ARGUELLO, CALIF. (1007 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	113	6.2	83	96	3.7
1,000	31	173	9.9	70	80	4.1
950	31	605	12.7	43	29	3.1
900	31	1,055	11.0	38	24	2.9
850	31	1,530	9.1	31		.0
800	31	2,029	6.6	28	338	3.9
750	31	2,553	3.6	27	330	6.8
700	31	3,112	.1	25	321	8.5
650	31	3,699	- 3.5		326	10.5
600	31	4,330	- 7.1		327	13.6
550	31	4,996	-11.7		321	12.8
500	31	5,725	-17.2		330	16.3
450	31	6,500	-22.7		326	21.0
400	31	7,361	-29.1		330	21.6
350	31	8,302	-36.4		328	22.3
300	31	9,353	-44.6		331	25.6
250	31	10,550	-53.0		318	31.1
200	31	11,967	-58.0		303	35.0
175	31	12,807	-59.3		298	37.5
150	31	13,770	-60.3		296	35.9
125	31	14,899	-62.8		291	31.7
100	31	16,265	-65.3		288	28.6
80	31	17,620	-65.8		287	23.1
60	30	19,361	-66.0		295	14.4
50	30	20,470	-64.3		295	9.1
40	29	21,841	-62.6		300	5.6
30	28	23,621	-60.9		342	5.6
25	28	24,755	-60.3		338	5.6
20	28	26,151	-58.4		342	7.2
15	28	27,971	-55.4		307	9.7
10	25	30,605	-48.8		290	22.0
7	21	32,984	-42.6		284	34.0
5	11	35,300	-38.6			
4	8	36,812	-36.9			

Standard pressure surface (mb.)	RAPID CITY, S. DAK. (907 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	966	- 5.5	73	324	4.1
1,000	31	196				
950	31	600				
900	31	1,029			318	5.6
850	31	1,485	- .5	50	316	15.5
800	31	1,968	- 3.0	50	313	19.4
750	31	2,475	- 5.0	50	318	22.2
700	31	3,018	- 7.6	45	315	25.1
650	31	3,585	-10.9	45	309	25.3
600	31	4,203	-14.3	41	310	27.4
550	31	4,854	-18.6	39	308	30.3
500	31	5,562	-23.4	39	306	32.1
450	31	6,319	-28.9	39	306	30.9
400	31	7,158	-35.1	37	305	34.8
350	31	8,076	-42.0		303	37.7
300	31	9,103	-49.3		301	40.4
250	31	10,279	-56.1		297	42.4
200	31	11,686	-58.3		291	40.8
175	31	12,528	-57.8		291	39.1
150	31	13,501	-57.7		292	39.2
125	31	14,649	-58.5		294	40.0
100	31	16,048	-59.9		296	33.4
80	31	17,438	-60.7		297	27.0
60	30	19,225	-61.1		301	21.4
50	30	20,357	-61.0		307	18.5
40	27	21,728	-60.7		328	14.0
30	24	23,511	-60.5		339	12.6
25	23	24,662	-60.0		349	13.4
20	18	26,031	-59.0		5	15.7
15	13	27,948	-55.8			
10						
7						
5						
4						

Standard pressure surface (mb.)	ST. CLOUD, MINN. (982 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	316	-10.6	77	258	2.9
1,000	31	173				
950	31	573	- 9.9	72	279	6.6
900	31	987	- 8.5	68	292	12.6
850	31	1,431	- 7.7	54	299	17.1
800	31	1,902	- 8.8	52	305	20.0
750	31	2,399	-10.1	46	307	23.7
700	31	2,932	-11.8	42	308	26.8
650	31	3,491	-14.6	43	308	30.3
600	31	4,098	-18.0	41	309	33.6
550	31	4,742	-22.0	42	308	36.9
500	31	5,439	-26.6	39	307	39.6
450	31	6,189	-31.8		304	42.7
400	31	7,016	-37.5		303	45.1
350	31	7,926	-44.0		304	49.7
300	31	8,946	-50.2		301	50.7
250	31	10,122	-55.1		300	52.7
200	31	11,540	-56.7		297	52.3
175	31	12,388	-56.2		299	49.5
150	31	13,369	-55.8		299	45.7
125	30	14,523	-56.7		300	41.6
100	30	15,935	-57.8		301	38.3
80	30	17,338	-58.9		302	32.3
60	30	19,137	-59.8		303	25.3
50	30	20,276	-59.8		308	20.6
40	29	21,675	-59.7		310	15.0
30	27	23,472	-59.8		317	10.3
25	26	24,625	-59.5		331	8.9
20	23	26,042	-59.0		349	4.9
15	15	27,896	-59.0			
10						
7						
5						
4						

Standard pressure surface (mb.)	ST. PAUL IS., ALASKA (992 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	10	- 0.8	88	358	1.4
1,000	31	-59				
950	31	348	- 2.2	81		.0
900	31	778	- 5.0	81	199	2.3
850	31	1,225	- 8.1	79	188	4.3
800	31	1,693	-10.8	68	188	4.9
750	31	2,184	-13.5	59	190	4.5
700	31	2,709	-16.6	52	191	6.6
650	31	3,256	-20.0	47	191	6.4
600	31	3,851	-24.1	46	182	8.4
550	31	4,473	-28.4	43	178	10.9
500	31	5,157	-32.9	43	171	13.6
450	31	5,882	-37.8		168	15.3
400	31	6,694	-43.1		165	20.2
350	31	7,584	-48.1		176	22.0
300	31	8,591	-51.6		182	27.2
250	31	9,770	-52.4		185	23.1
200	31	11,221	-49.7		195	20.0
175	31	12,096	-49.0		187	20.6
150	31	13,109	-48.5		199	20.2
125	31	14,311	-47.8		197	18.1
100	31	15,787	-47.0		201	16.5
80	31	17,264	-47.1		200	15.9
60	31	19,165	-47.6		206	12.8
50	30	20,365	-47.8		203	8.7
40	27	21,851	-47.4		196	6.0
30	23	23,774	-46.2		134	1.9
25	22	24,997	-45.3		76	3.9
20	20	26,488	-45.0		45	7.0
15	12	28,447	-44.6			
10						

Standard pressure surface (mb.)	SALEM, OREG. (1017 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	61	2.8	87	196	2.9
1,000	31	199	3.5	80	206	1.6
950	31	617	5.5	68	212	6.0
900	31	1,059	5.3	59	219	9.1
850	31	1,524	3.4	53	220	11.7
800	31	2,014	1.2	47	237	11.3
750	31	2,531	- 1.6	44	247	12.6
700	31	3,077	- 4.4	43	256	13.6
650	31	3,655	- 7.6	40	263	14.6
600	31	4,276	-11.4	37	275	17.7
550	31	4,935	-15.2	36	276	21.6
500	31	5,654	-19.6	36	281	24.9
450	31	6,421	-24.8	40	282	30.7
400	31	7,276	-30.9	38	284	34.0
350	31	8,209	-38.2		285	35.9
300	31	9,251	-46.5		273	31.1
250	31	10,439	-55.0		275	32.3
200	31	11,843	-60.1		280	32.8
175	31	12,677	-60.3		276	29.5
150	31	13,641	-59.0		276	28.0
125	30	14,777	-60.1		276	25.6
100	30	16,168	-60.6		281	19.4
80	30	17,555	-61.2		277	14.2
60	30	19,340	-61.3		295	8.9
50	30	20,474	-60.6		318	5.6
40	27	21,860	-59.5		350	5.6
30	26	23,666	-58.8		12	6.2
25	21	24,811	-59.0		30	8.2
20	18	26,226	-58.8		37	11.5
15	15	28,045	-58.8		36	17.3
10						

Standard pressure surface (mb.)	SALT LAKE CITY, UTAH (878 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,288	- 3.9	78	153	2.9
1,000	31	253				
950	31	666				
900	31	1,096				
850	31	1,550	- .5	57	182	3.3
800	31	2,035	- 1.7	51	218	2.7
750	31	2,550	- 3.3	47	279	3.7
700	31	3,091	- 5.5	43	310	5.8
650	31	3,670	- 8.5	38	303	9.1
600	31	4,288	-12.2	36	312	11.5
550	31	4,947	-16.2	34	306	15.5
500	31	5,661	-21.0		312	18.1
450	31	6,427	-26.4		310	18.8
400	31	7,274	-32.3		315	19.2
350	31	8,203	-38.9		321	19.2
300	31	9,245	-46.4		329	24.9
250	31	10,435	-53.9		323	26.2
200	31	11,849	-58.9		310	29.7
175	31	12,688	-59.1		297	28.8
150	31	13,657	-58.4		294	27.8
125	31	14,801	-59.6		293	27.6
100	31	16,190	-61.7		298	23.5
80	26	17,561	-62.7		298	21.6
60	25	19,332	-62.8		307	14.8
50	25	20,456	-62.4		317	12.8
40	25	21,836	-61.6		341	11.1
30	23	23,626	-61.2		352	9.9
25	20	24,760	-61.0		4	11.5
20	19	26,161	-59.7		13	13.8
15	13	28,012	-57.3		341	5.6
10						

Standard pressure surface (mb.)	SAN ANTONIO, TEX. (994 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	243	7.3	87	359	3.7
1,000	31	192				
950	31	617	7.6	77	82	2.9
900	31	1,061	8.1	68	251	1.4
850	31	1,534	7.7	60	213	4.1
800	31	2,033	6.0	54	230	6.4
750	31	2,562	4.8	47	236	10.5
700	31	3,122	2.8	36	257	15.5
650	31	3,717	- .4	36	263	17.7
600	31	4,355	- 4.4	34	267	22.2
550	31	5,034	- 8.7		265	25.3
500	31	5,768	-13.5		258	29.3
450	31	6,558	-19.1		269	35.6
400	31	7,430	-25.4		266	36.9
350	31	8,386	-32.1		274	32.1
300	31	9,457	-39.9		274	35.9
250	31	10,680	-48.8			
200	31	12,115	-58.4			
175	31	12,947	-62.0			
150	31	13,897	-63.5			
125	30	15,010	-65.9			
100	30	16,354	-68.9			
80	29	17,686	-70.0			
60	26	19,411	-67.9			
50	25	20,508	-65.7			
40	23	21,865	-63.1			
30	18	23,634	-60.4			
25	17	24,782	-58.5			
20	15	26,195	-56.2			
15	14	28,023	-53.5			
10	8	30,662	-50.6			

Standard pressure surface (mb.)	SAN DIEGO, CALIF. (1004 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	124	6.6	78	52	2.1
1,000	31	160	10.0	64	56	2.1
950	31	587	13.0	39	10	4.3
900	31	1,043	10.5	36	356	5.2
850	31	1,517	7.9	35	340	6.4
800	31	2,014	5.3	29	348	7.2
750	31	2,531	2.5	25	336	6.4
700	31	3,094	- .7		324	8.5
650	31	3,674	- 4.4		324	13.2
600	31	4,310	- 8.5		319	14.2
550	31	4,971	-13.0		318	15.9
500	31	5,700	-18.2		313	18.5
450	31	6,467	-23.8		312	19.4
400	31	7,331	-29.9		311	21.2
350	31	8,271	-36.2		308	26.2
300	31	9,326	-43.1		311	29.0
250	31	10,535	-50.3		297	33.6
200	31	11,974	-55.6		283	40.6
175	31	12,821	-57.8		281	39.6
150	31	13,789	-60.2		276	38.9
125	31	14,920	-62.6		279	34.6
100	30	16,288	-66.1		280	27.6
80	30	17,635	-67.6		282	22.2
60	30	19,372	-66.1		290	12.0
50	30	20,481	-64.4		291	9.5
40	29	21,851	-63.0		299	7.4
30	27	23,632	-61.0		307	7.2
25	23	24,763	-60.0		315	6.2
20	22	26,164	-57.3		313	10.3
15	17	27,999	-52.6		293	19.2
10						

Standard pressure surface (mb.)	SAN JUAN, P. R. (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	22.8	84	95	3.3
1,000	31	136	23.5	76	82	7.4
950	31	585	20.7	76	60	11.5
900	31	1,050	17.5	76	66	10.7
850	31	1,537	14.2	78	63	10.1
800	31	2,047	11.4	74	60	9.5
750	31	2,585	9.2	53	65	8.7
700	31	3,156	7.7	36	51	6.2
650	31	3,762	5.9		35	5.1
600	31	4,417	2.5		35	5.6
550	31	5,107	- 2.0		19	3.1
500	31	5,867	- 6.6		333	5.6
450	31	6,673	-12.0		316	10.1
400	31	7,574	-18.7		305	14.8
350	31	8,555	-25.9		304	18.3
300	31	9,651	-34.6		287	20.0
250	31	10,900	-44.1		288	31.5
200	31	12,359	-55.7		274	35.4
175	31	13,198	-61.5		268	31.7
150	31	14,141	-67.0		270	27.4
125	30	15,228	-71.8		273	22.5
100	29	16,526	-76.8		271	14.6
80	29	17,800	-78.8		270	5.1
60	29	19,469	-69.8		81	3.7
50	28	20,569	-64.0		64	5.6
40	28	21,953	-59.5		65	5.2
30	28	23,773	-55.2		74	7.8
25	26	24,932	-52.8		61	7.4
20	26	26,383	-49.5		18	3.5
15	25	28,276	-47.4		284	8.5
10	18	30,971	-43.4			

Standard pressure surface (mb.)	SANTA MONICA, CALIF. (1015 MB)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	38	10.3	64	28	5.4
1,000	31	166	13.6	45	21	5.2
950	31	599	13.3	35	13	5.1
900	31	1,051	11.0	33	6	6.0
850	31	1,525	8.4	29	2	4.5
800	31	2,024	5.8	26	352	6.4
750	31	2,549	2.6	28	341	9.5
700	31	3,105	- .6	25	337	10.1
650	31	3,691	- 4.3	27	332	13.4
600	31	4,320	- 8.2		326	14.4
550	31	4,987	-12.7		327	14.0
500	31	5,712	-17.7		325	14.8
450	31	6,487	-23.5		325	17.1
400	31	7,344	-29.7		324	18.8
350	31	8,284	-36.3		324	22.2
300	31	9,337	-44.0		320	26.6
250	31	10,539	-51.9		312	28.4
200	31	11,967	-56.3		291	33.4
175	30	12,813	-58.0		288	35.6
150	30	13,780	-59.7		285	33.6
125	30	14,914	-62.3		282	30.1
100	30	16,280	-65.2		286	26.6
80	30	17,635	-66.1		287	22.3
60	28	19,384	-65.6		285	14.6
50	28	20,494	-64.2		290	8.0
40	27	21,865	-62.6		295	7.2
30	26	23,642	-61.5		310	7.2
25	23	24,778	-60.2		323	7.4
20	22	26,176	-58.2		304	12.4
15	21	28,001	-54.5		287	16.5
10	6	30,679	-45.8			

Standard pressure surface (mb.)	SAULT STE. MARIE, MICH. (990 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	221	-10.1	66	317	2.3
1,000	31	144				
950	31	538	-10.4	66	277	8.0
900	31	956	-11.5	67	282	15.2
850	31	1,392	-12.9	63	281	19.2
800	31	1,854	-13.7	58	281	22.5
750	31	2,345	-15.1	50	284	25.1
700	31	2,864	-16.7	45	285	28.0
650	30	3,414	-19.4	44	287	30.5
600	30	4,009	-22.4	41	285	33.2
550	30	4,639	-25.9	42	285	36.9
500	30	5,330	-30.1		283	40.4
450	30	6,072	-34.7	44	287	43.7
400	30	6,890	-40.3		287	48.0
350	30	7,791	-45.5		286	54.8
300	30	8,807	-50.6		284	56.0
250	30	9,984	-54.4		283	55.8
200	30	11,414	-53.8		284	49.2
175	30	12,273	-53.9		284	48.6
150	30	13,264	-53.7		284	43.3
125	29	14,435	-53.9		282	42.0
100	28	15,872	-55.0		282	34.8
80	28	17,291	-56.8		280	29.9
60	26	19,124	-57.5		283	18.1
50	25	20,285	-57.6		274	11.1
40	25	21,691	-58.0		254	6.6
30	23	23,514	-58.2		219	3.9
25	18	24,664	-58.5		175	3.5
20	9	26,095	-58.7			
15						
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Standard pressure surface (mb.)	SEATTLE, WASH. (1008 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	125	3.2	86	131	2.5
1,000	31	192			121	2.7
950	31	610	5.0	67	182	6.2
900	31	1,051	3.8	61	209	9.1
850	31	1,514	2.0	55	220	10.1
800	31	2,002	- .3	52	237	10.1
750	31	2,513	- 2.8	51	249	11.5
700	31	3,060	- 5.7	48	264	12.8
650	31	3,631	- 9.0	49	267	14.6
600	31	4,253	-12.7	46	275	15.3
550	31	4,905	-17.0	43	278	18.1
500	31	5,621	-21.8	40	275	21.8
450	31	6,379	-27.0	39	274	26.6
400	31	7,229	-32.9	39	275	30.5
350	31	8,156	-39.5		284	35.0
300	31	9,195	-46.9		283	37.7
250	31	10,382	-54.8		286	39.2
200	31	11,790	-59.2		282	38.5
175	31	12,625	-59.7		285	35.4
150	30	13,598	-58.4		285	30.7
125	30	14,745	-58.2		286	28.0
100	29	16,147	-59.2		288	22.5
80	29	17,541	-60.4		292	16.3
60	29	19,335	-59.9		305	11.5
50	28	20,479	-59.0		319	8.0
40	24	21,891	-58.3		358	6.4
30	20	23,694	-57.6		24	9.7
25	17	24,833	-57.6		31	7.0
20	12	26,227	-58.9		39	7.2
15	5	28,074	-58.3			
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Standard pressure surface (mb.)	SHEMYA, ALASKA (989 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	37	- 0.8	82	276	9.5
1,000	31	-49				
950	31	360	- 3.0	76	272	10.9
900	31	784	- 6.2	75	272	11.9
850	31	1,229	- 9.5	73	265	12.8
800	31	1,695	-12.5	67	272	13.0
750	31	2,184	-15.8	54	276	13.4
700	31	2,702	-19.1	51	270	14.8
650	31	3,250	-22.7	52	257	15.2
600	31	3,833	-26.7	51	257	14.2
550	31	4,453	-30.8	47	258	14.8
500	31	5,127	-35.4	51	257	14.6
450	31	5,853	-40.3		242	16.3
400	31	6,651	-45.1		253	15.5
350	31	7,533	-49.3		239	19.2
300	31	8,537	-52.3		243	24.1
250	31	9,718	-50.9		250	25.3
200	31	11,176	-48.9		259	27.0
175	31	12,055	-48.1		261	27.8
150	31	13,071	-48.3		259	28.8
125	31	14,273	-47.8		260	28.8
100	31	15,747	-47.8		257	29.1
80	28	17,221	-47.0		251	25.1
60	27	19,131	-46.6		247	20.0
50	27	20,341	-46.6		237	16.5
40	27	21,823	-46.2		226	9.5
30	25	23,726	-46.6		210	6.6
25	21	24,923	-46.3		201	6.8
20	17	26,404	-46.0		165	5.8
15	7	28,404	-41.9			
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	SHREVEPORT, LA. (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	76	4.2	83	72	2.1
1,000--	30	202	4.7	74	97	3.1
950----	30	620	4.1	70	193	2.9
900----	30	1,060	4.3	60	230	6.4
850----	30	1,526	4.1	55	249	8.9
800----	30	2,018	2.6	51	257	13.4
750----	30	2,536	.5	48	264	16.7
700----	30	3,091	- 1.8	46	266	20.4
650----	30	3,674	- 4.3	43	267	24.5
600----	30	4,306	- 7.8	42	266	27.2
550----	30	4,972	-12.0	36	266	31.5
500----	30	5,701	-16.4		270	36.3
450----	30	6,477	-21.7		271	40.2
400----	30	7,345	-27.9		269	45.9
350----	30	8,291	-34.9		269	51.9
300----	30	9,350	-42.6		269	57.3
250----	30	10,560	-50.6		268	67.6
200----	30	11,987	-58.7		270	76.4
175----	30	12,819	-61.8		270	74.2
150----	30	13,771	-62.7		270	66.3
125----	29	14,893	-64.3		271	56.0
100----	28	16,246	-67.1		271	48.6
80-----	28	17,588	-67.8		271	33.8
60-----	28	19,320	-66.5		276	27.8
50-----	28	20,428	-64.6		273	21.0
40-----	27	21,798	-61.9		263	18.5
30-----	27	23,588	-59.4		259	25.3
25-----	25	24,731	-58.0		257	27.4
20-----	23	26,144	-56.3		260	31.5
15-----	21	27,991	-51.8		262	36.9
10-----	16	30,672	-43.7			

Standard pressure surface (mb.)	SPOKANE, WASH. (940 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	722	- 4.0	89	127	0.8
1,000--	31	227				
950----	31	639				
900----	31	1,065	- 2.1	81	164	3.3
850----	31	1,520	- 1.4	71	249	6.8
800----	31	2,003	- 2.1	61	265	9.7
750----	31	2,515	- 3.7	52	274	12.2
700----	31	3,058	- 6.2	49	278	13.6
650----	31	3,629	- 9.8	49	287	16.9
600----	31	4,248	-13.2	48	287	19.6
550----	31	4,899	-17.3	44	296	21.8
500----	31	5,614	-21.9	41	297	24.5
450----	31	6,372	-27.2	40	295	25.5
400----	31	7,220	-32.9	36	297	29.9
350----	31	8,146	-39.7		298	33.2
300----	31	9,183	-47.4		299	37.1
250----	31	10,368	-54.8		300	38.7
200----	30	11,774	-58.8		301	40.2
175----	30	12,612	-58.8		299	37.3
150----	30	13,582	-57.9		297	35.2
125----	30	14,733	-57.4		298	29.1
100----	30	16,138	-58.9		300	25.5
80-----	30	17,535	-59.9		305	18.5
60-----	30	19,331	-59.5		321	15.9
50-----	30	20,473	-59.2		327	11.7
40-----	29	21,878	-58.6		354	11.1
30-----	26	23,696	-58.6		12	12.2
25-----	23	24,844	-58.6		23	15.2
20-----	21	26,243	-58.7		22	16.7
15-----	10	28,130	-56.7		28	15.5
10-----						

Standard pressure surface (mb.)	TAMPA FLA (1023 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	8	9.9	76	27	6.2
1,000--	31	196	12.0	66	43	9.3
950----	31	629	11.2	59	66	5.2
900----	31	1,076	9.3	55	239	.8
850----	31	1,549	7.8	45	270	4.3
800----	31	2,049	7.0		286	8.0
750----	31	2,575	5.6		278	11.7
700----	31	3,140	3.2		276	15.3
650----	31	3,736	.1		277	18.8
600----	31	4,375	- 3.5		275	22.7
550----	31	5,053	- 7.8		274	29.1
500----	31	5,795	-12.3		274	33.6
450----	31	6,590	-17.9		271	37.1
400----	31	7,465	-23.9	35	269	44.7
350----	31	8,427	-30.7	36	268	52.5
300----	30	9,508	-38.7		269	55.6
250----	30	10,737	-48.0		268	60.6
200----	30	12,177	-57.6		265	62.2
175----	30	13,012	-61.4		266	60.6
150----	29	13,967	-64.3		267	57.1
125----	28	15,078	-67.5		269	51.3
100----	27	16,410	-71.0		264	41.8
80-----	27	17,727	-71.6		267	34.2
60-----	27	19,437	-67.4		268	20.8
50-----	26	20,546	-64.1		268	18.8
40-----	26	21,927	-59.7		269	19.0
30-----	21	23,746	-55.6		270	23.1
25-----	18	24,901	-55.0		273	25.5
20-----	16	26,328	-52.6		275	33.0
15-----	11	28,193	-48.8			
10-----						

Standard pressure surface (mb.)	TATOOSH IS., WASH. (1018 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	31	7.2	79	107	11.5
1,000--	31	176	6.8	73	129	11.7
950----	31	593	5.8	66	162	10.7
900----	31	1,037	3.6	65	191	11.3
850----	31	1,500	1.6	61	225	10.5
800----	31	1,987	- .3	55	239	11.3
750----	31	2,495	- 2.6	54	244	12.2
700----	31	3,046	- 5.4	48	249	15.0
650----	31	3,615	- 8.4	43	254	16.1
600----	31	4,245	-12.4	42	257	17.9
550----	31	4,890	-16.9	39	259	19.6
500----	31	5,611	-21.6	36	260	23.9
450----	31	6,370	-26.8	36	267	30.1
400----	31	7,221	-32.9	36	263	29.9
350----	31	8,148	-39.7		267	34.4
300----	31	9,185	-47.0		263	40.2
250----	31	10,372	-55.1		258	42.7
200----	31	11,780	-59.4		262	45.1
175----	29	12,617	-59.8		268	38.5
150----	29	13,585	-58.2		273	32.1
125----	29	14,732	-58.5		271	28.4
100----	29	16,134	-59.1		277	21.6
80-----	29	17,531	-59.8		286	18.5
60-----	27	19,326	-59.9		296	11.5
50-----	27	20,466	-59.1		336	9.7
40-----	26	21,867	-58.1		5	8.2
30-----	24	23,685	-57.9		13	10.9
25-----	22	24,830	-58.5		33	14.2
20-----	15	26,231	-58.2			
15-----	7	28,047	-58.0			
10-----						

Standard pressure surface (mb.)	TOPEKA, KANSAS (992 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	269	- 3.3	81	290	2.1
1,000--	31	201				
950----	31	611	- 2.8	66	292	5.8
900----	31	1,037	- 2.1	58	300	8.9
850----	31	1,492	- 1.8	49	299	11.7
800----	31	1,974	- 2.5	45	298	15.5
750----	31	2,482	- 4.2	45	293	22.0
700----	31	3,027	- 6.1	40	290	24.1
650----	31	3,601	- 9.0	39	289	26.4
600----	31	4,221	-12.2		287	29.0
550----	31	4,876	-16.4	36	298	30.7
500----	31	5,593	-21.0		292	33.0
450----	31	6,355	-26.7		290	36.9
400----	31	7,204	-32.9		288	41.2
350----	31	8,131	-39.7		285	46.6
300----	31	9,168	-47.2		284	55.2
250----	31	10,356	-54.1		277	60.2
200----	30	11,770	-57.8		277	65.9
175----	30	12,611	-58.1		281	63.5
150----	30	13,583	-58.3		282	57.3
125----	27	14,725	-59.4		284	51.1
100----	27	16,115	-61.8		283	42.9
80-----	27	17,493	-63.0		284	31.9
60-----	26	19,266	-62.8		292	24.3
50-----	25	20,385	-62.5		292	19.6
40-----	25	21,765	-61.6		294	12.8
30-----	22	23,564	-60.1		294	9.7
25-----	22	24,704	-59.1		308	5.4
20-----	20	26,111	-58.0		308	3.7
15-----	8	27,938	-56.0			
10-----						

Standard pressure surface (mb.)	TUCSON, ARIZ. (927 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	781	3.9	54	137	6.6
1,000--	31	172				
950----	31	591				
900----	31	1,037	9.8	38	128	8.9
850----	31	1,510	8.3	34	131	4.7
800----	31	2,008	5.5	32	210	4.7
750----	31	2,529	2.6	31	239	5.2
700----	31	3,088	- .5	28	261	8.0
650----	31	3,670	- 4.2	29	265	10.7
600----	31	4,304	- 8.3	30	263	14.2
550----	31	4,967	-12.5		256	17.3
500----	31	5,696	-17.7		257	20.4
450----	31	6,468	-23.3		257	24.3
400----	31	7,327	-29.8		255	29.7
350----	31	8,267	-35.9		259	33.4
300----	31	9,323	-42.6		255	39.4
250----	31	10,536	-49.2		261	42.0
200----	31	11,979	-55.2		263	47.8
175----	31	12,826	-57.7		269	48.2
150----	31	13,794	-60.0		269	46.6
125----	31	14,925	-63.0		270	41.0
100----	31	16,290	-65.3		272	34.8
80-----	31	17,642	-67.1		275	24.9
60-----	31	19,385	-65.5		286	12.6
50-----	30	20,497	-63.9		287	11.7
40-----	28	21,860	-63.3		299	9.3
30-----	25	23,642	-61.4		279	8.7
25-----	22	24,786	-59.2		280	12.2
20-----	17	26,186	-56.7		282	13.8
15-----	11	28,033	-52.8			
10-----						

Standard pressure surface (mb.)	WASHINGTON, D. C. (1013 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	84	- 8.8	72	348	3.3
1,000--	31	183	- 3.3	54	312	5.6
950----	31	593	- 2.5	53	296	11.9
900----	31	1,019	- 4.0	49	289	17.1
850----	31	1,469	- 4.8	44	287	19.0
800----	31	1,945	- 5.9	45	282	22.7
750----	31	2,452	- 7.0	44	280	28.4
700----	31	2,987	- 8.8	43	273	30.9
650----	31	3,556	-11.3	42	270	35.2
600----	31	4,169	-14.6	41	272	38.3
550----	31	4,822	-18.5	41	270	40.8
500----	31	5,529	-23.0	39	269	45.5
450----	31	6,289	-28.1	37	267	51.3
400----	31	7,130	-33.5	37	268	58.5
350----	30	8,063	-40.2		268	68.0
300----	30	9,098	-47.1		266	73.8
250----	30	10,287	-53.2		267	77.7
200----	30	11,713	-56.4		265	76.2
175----	30	12,560	-56.9		266	70.9
150----	30	13,535	-57.6		266	63.5
125----	30	14,682	-59.5		264	55.0
100----	30	16,073	-61.0		263	50.1
80-----	30	17,456	-61.5		262	37.5
60-----	29	19,246	-61.1		259	25.6
50-----	29	20,380	-60.0		257	25.1
40-----	25	21,781	-58.5		260	19.8
30-----	25	23,591	-57.7		262	16.9
25-----	22	24,747	-56.8		265	13.2
20-----	21	26,156	-55.9		253	12.8
15-----	17	28,018	-52.4		260	15.0
10-----	6	30,737	-43.4			

Standard pressure surface (mb.)	WINNEMUCCA, NEV. (876 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,310	- 6.0	85	153	1.2
1,000--	31	262				
950----	31	670				
900----	31	1,104				
850----	31	1,553	.7	59	137	2.1
800----	31	2,040	.4	47	253	3.3
750----	31	2,551	- 1.7	43	277	6.0
700----	31	3,103	- 4.5	42	290	7.4
650----	31	3,678	- 7.4	35	297	9.7
600----	31	4,303	-10.8	33	313	12.8
550----	31	4,959	-14.4	34	323	14.0
500----	31	5,683	-19.3	32	318	15.7
450----	31	6,452	-24.9		323	16.1
400----	31	7,304	-31.2		316	18.8
350----	31	8,236	-38.3		312	22.0
300----	31	9,279	-46.3		304	20.8
250----	31	10,467	-54.9		303	22.7
200----	31	11,873	-60.3		297	30.1
175----	31	12,706	-60.4		293	28.4
150----	31	13,669	-59.8		289	28.4
125----	31	14,807	-60.3		288	25.8
100----	31	16,191	-62.2		298	19.8
80-----	31	17,565	-63.1		299	16.1
60-----	29	19,339	-62.4		294	8.9
50-----	28	20,463	-61.8		322	7.8
40-----	26	21,855	-61.1		15	9.5
30-----	20	23,653	-60.4		33	8.7
25-----	18	24,794	-59.3		42	11.5
20-----	12	26,202	-57.7			
15-----	7	28,040	-55.9			
10-----						

Standard pressure surface (mb.)	YAKUTAT, ALASKA (1010 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	12	1.4	91	98	5.6
1,000--	31	88			106	8.4
950----	31	504	1.2	78	129	14.6
900----	31	936	- 1.1	76	146	17.5
850----	31	1,391	- 3.8	74	157	19.0
800----	31	1,868	- 6.7	72	165	17.9
750----	31	2,368	- 9.8	67	172	15.9
700----	31	2,900	-12.8	59	179	17.3
650----	31	3,461	-16.0	56	186	20.0
600----	31	4,061	-19.8	55	186	23.1
550----	31	4,696	-23.7	57	200	23.1
500----	31	5,395	-28.3	52	207	24.7
450----	31	6,135	-33.3	48	215	26.2
400----	31	6,963	-38.9	48	223	33.2
350----	31	7,868	-45.0		225	43.1
300----	30	8,879	-51.0		229	46.2
250----	30	10,055	-54.4		233	46.4
200----	29	11,486	-53.4		238	35.2
175----	29	12,348	-52.1		238	26.6
150----	29	13,345	-52.6		238	26.6
125----	29	14,524	-52.3		239	23.3
100----	29	15,970	-51.8		245	18.8
80-----	29	17,415	-52.5		250	16.7
60-----	25	19,271	-52.7		267	9.3
50-----	24	20,445	-52.8		276	9.1
40-----	21	21,886	-52.5		310	11.1
30-----	20	23,738	-53.3		344	11.7
25-----	19	24,916	-53.6		352	13.2
20-----	17	26,336	-54.7		356	14.8
15-----	6	28,238	-37.4			
10-----						

Note: All observations scheduled at 1200, G. C. T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant wind speed is biased toward a lower value as the number of observations on which the resultant is based lessens. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun.

DECEMBER 1960

ALBUQUERQUE, N. MEX.

Date	A.M. 78.7°	A.M. 75.7°	A.M. 70.7°	A.M. 60.0°	*	P.M. 60.0°	P.M. 70.7°	P.M. 75.7°	P.M. 78.7°
Air mass	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Dec.									
4	----	----	----	----	1.35	1.29	1.11	0.95	0.80
5	0.86	1.01	----	1.34	----	----	----	----	----
6	.71	.87	1.08	----	----	----	----	----	----
7	----	----	----	----	1.39	1.33	1.09	.98	----
11	.98	1.09	1.20	1.36	1.32	1.32	----	.97	.85
14	----	----	----	----	----	----	1.19	1.11	.99
15	1.06	1.13	1.15	1.42	1.41	1.39	1.03	.94	.87
16	1.01	1.13	1.25	1.39	1.41	1.34	1.18	1.07	.95
17	1.03	1.11	1.23	1.32	1.29	1.31	1.22	1.09	.99
18	1.02	1.14	1.23	1.42	1.43	1.41	1.23	1.12	1.01
19	1.12	1.19	1.30	1.38	(1.41)	1.39	1.22	(1.08)	(.99)
20	1.09	1.20	1.31	1.44	1.44	1.44	1.30	1.17	1.07
21	----	----	----	(1.21)	(1.15)	----	----	----	----
22	----	----	----	(1.39)	----	----	----	----	(.95)
24	----	----	1.27	1.40	1.42	1.41	1.26	1.14	1.01
25	----	----	1.27	1.39	1.45	1.41	1.27	1.16	1.04
26	----	----	----	----	(1.38)	----	(1.21)	(1.13)	(1.01)
27	1.06	1.18	1.28	1.34	1.37	1.30	1.13	.98	.88
28	----	----	----	----	----	----	1.05	.87	.68
29	.87	.97	1.14	1.34	1.37	1.35	----	----	----
30	----	----	----	----	----	----	----	1.12	1.02
31	1.07	1.16	1.28	1.42	1.39	1.39	1.24	-----	-----
Averages	0.99	1.10	1.23	1.38	1.39	1.36	1.18	1.05	0.94

OMAHA, NEBR.

Date	A.M. 78.7°	A.M. 75.7°	A.M. 70.7°	A.M. 60.0°	*	P.M. 60.0°	P.M. 70.7°	P.M. 75.7°	P.M. 78.7°
Air mass	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Dec.									
1	----	----	S 1.14	----	S 1.27	----	S 0.95	----	----
2	S 0.68	S 0.80	M .93	----	M 1.00	----	I .48	†	†
6	----	----	----	----	----	----	S .95	†	†
7	S .84	S .93	S 1.06	----	S 1.18	----	S 1.06	S .91	†
8	S .76	S .93	S 1.08	----	----	----	----	----	----
12	S .77	S .90	S 1.04	----	S 1.13	----	S 1.01	S .90	S 0.77
13	----	----	----	----	----	----	S 1.04	S .91	†
14	----	----	----	----	S 1.11	----	S 1.03	S .89	S .77
15	----	----	----	----	----	----	S 1.08	S .93	S .80
16	S .83	S .96	S 1.12	----	S 1.17	----	M .99	----	----
17	S .87	S .98	S 1.11	----	S 1.21	----	S 1.00	S .84	----
18	----	----	----	----	----	----	S .98	S .84	S .72
20	----	----	----	----	S 1.19	----	S 1.01	S .90	S .77
21	----	----	S 1.17	----	S 1.26	----	----	----	----
24	----	----	----	----	----	----	S 1.07	S .93	S .79
30	S .83	S .94	S 1.14	----	S 1.18	----	S 1.09	S .96	S .86
31	S .84	S .95	S 1.07	----	S 1.14	----	----	----	----
Averages	0.80	0.92	1.09	----	1.17	----	0.98	0.90	0.78

GUAM, M. I.

Date	A.M. 78.7°	A.M. 75.7°	A.M. 70.7°	A.M. 60.0°	*	P.M. 60.0°	P.M. 70.7°	P.M. 75.7°	P.M. 78.7°
Air mass	4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92

No observations during December

* Values corresponding to true solar noon.
† Wind mast shadow
() Clouds present
S Slight haze - indeterminable
M Moderate haze - indeterminable
I Intense haze - indeterminable

TUCSON, ARIZ.

Date	A.M. 78.7°	A.M. 75.7°	A.M. 70.7°	A.M. 60.0°	*	P.M. 60.0°	P.M. 70.7°	P.M. 75.7°	P.M. 78.7°
Air mass	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Dec.									
4	0.98	1.09	1.20	1.37	----	----	----	1.08	1.00
5	----	----	1.24	1.40	1.44	----	1.21	1.08	.99
6	----	----	----	----	1.51	----	----	1.11	----
7	----	----	----	----	1.42	1.36	1.24	1.11	1.00
8	----	1.11	----	----	1.44	----	----	----	----
10	.85	.97	1.11	----	----	----	1.12	----	.85
11	----	----	----	----	1.39	----	1.16	1.01	.89
13	----	----	1.10	1.27	1.30	1.26	----	----	----
14	.88	.96	1.09	1.28	1.33	----	----	----	----
15	.99	1.09	1.19	1.35	----	----	----	----	----
16	.94	1.06	1.17	1.28	----	----	----	1.02	.88
17	----	----	----	1.37	1.44	1.40	----	----	----
18	1.03	1.14	1.22	1.38	1.40	1.35	1.21	1.05	.93
19	.93	1.03	1.13	----	----	1.34	----	.96	.91
20	.85	.98	1.15	----	1.39	----	----	----	----
21	1.07	1.17	1.27	----	----	----	----	----	----
22	----	----	----	----	1.41	1.37	1.18	1.10	.98
23	.97	1.06	1.16	1.31	1.35	----	----	1.05	.94
24	1.04	1.14	1.26	1.42	1.44	1.40	1.26	1.13	1.05
25	1.01	1.12	1.23	1.38	----	1.38	1.23	1.11	1.01
26	1.03	1.11	1.23	1.36	1.41	1.36	----	1.03	.92
27	.97	1.07	----	1.37	1.41	1.38	----	----	----
31	.94	1.07	1.18	1.35	1.41	----	----	----	----
Averages	0.96	1.07	1.18	1.35	1.41	1.36	1.20	1.06	0.95

MADISON, WIS.

Date	A.M. 78.7°	A.M. 75.7°	A.M. 70.7°	A.M. 60.0°	*	P.M. 60.0°	P.M. 70.7°	P.M. 75.7°	P.M. 78.7°
Air mass	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Dec.									
1	S 1.12	S 1.22	S 1.31	----	S 1.39	----	S 1.31	S 1.21	S 1.11
8	S 1.10	S 1.21	----	----	----	----	----	----	----
12	S 1.12	S 1.22	S 1.36	----	S 1.42	----	S 1.33	S 1.21	S 1.11
17	S 1.09	S 1.18	1.31	----	----	----	----	----	----
Averages	1.11	1.21	1.33	----	1.41	----	1.32	1.21	1.11

MAUNA LOA OBS., HAWAII

Date	A.M. 78.7°	A.M. 75.7°	A.M. 70.7°	A.M. 60.0°	*	P.M. 60.0°	P.M. 70.7°	P.M. 75.7°	P.M. 78.7°
Air mass	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Dec.									
2	1.30	1.38	----	----	1.64	----	----	----	----
5	----	----	----	----	----	----	1.38	1.28	1.21
6	1.26	1.35	1.44	1.56	1.63	1.53	----	----	1.25
7	1.27	1.35	1.44	1.55	1.62	1.49	1.39	1.31	1.22
8	1.28	1.36	1.45	1.55	1.62	1.54	1.43	1.35	1.26
9	1.31	1.39	1.47	1.58	1.66	1.58	1.48	1.39	1.31
10	1.29	1.37	1.47	1.58	1.66	1.57	1.46	1.35	1.27
11	1.33	1.40	1.48	1.59	1.65	1.53	1.39	1.27	1.19
12	1.31	1.39	1.47	1.58	1.66	(1.57)	1.46	1.37	1.28
13	1.32	1.39	1.48	1.59	1.63	----	----	----	----
14	1.30	1.39	1.48	1.58	----	----	----	----	----
15	1.29	1.37	1.46	1.56	1.61	----	1.41	1.32	1.23
16	1.27	1.35	1.44	1.55	----	----	----	----	----
17	1.26	1.34	1.43	1.54	1.61	1.49	1.37	1.26	1.17
18	----	----	----	1.53	1.63	1.53	1.42	1.34	----
19	1.26	1.35	1.45	1.54	----	----	----	----	----
20	1.23	1.32	1.40	1.52	1.59	----	----	----	----
21	1.21	1.31	1.41	1.53	1.60	----	----	----	----
22	1.25	1.34	1.42	1.53	1.61	----	----	----	----
23	1.24	1.33	1.43	1.54	1.61	----	----	----	----
24	1.26	1.34	1.43	1.54	1.60	1.51	----	1.26	1.18
25	1.23	1.33	1.42	1.53	1.60	----	----	----	----
26	1.24	1.34	1.43	1.53	1.61	----	----	----	----
27	1.25	1.33	1.43	1.53	1.63	1.54	1.42	1.32	1.24
28	1.27	1.36	1.45	1.56	1.62	----	1.42	----	1.23
29	1.27	1.35	1.45	1.56	----	----	----	----	----
30	1.22	1.31	1.40	1.52	----	----	----	----	----
31	1.22	1.32	1.40	1.52	----	----	----	----	----
Averages	1.27	1.35	1.44	1.55	1.62	(1.53)	1.42	1.32	1.23

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1960	Albuquerque, N. Mex.	Ames, Iowa	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill Obs. Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area
Dec. 3	162	178	11	353	64	320	18	158	206	194	176	281	657
Dec. 4	228	27	17	357	163	290	8	50	208	148	194	286	636
Dec. 5	285	50	1	347	140	263	8	65	200	235	182	289	660
Dec. 6	304	223	1	332	169	210	8	142	174	212	155	---	648
Dec. 7	333	177	26	333	181	192	---	63	153	200	128	74	663
Dec. 8	110	230	13	334	157	105	17	111	119	203	136	54	665
Dec. 9	210	172	---	153	112	293	5	183	227	212	212	85	---
Average	233	151	12	317	141	239	11	110	184	201	169	178	655
Dec. 10	261	100	6	121	27	92	9	172	86	199	97	---	678
Dec. 11	---	143	0	137	12	133	24	53	155	191	140	284	370
Dec. 12	202	223	54	259	65	251	3	78	38	181	22	57	672
Dec. 13	119	186	81	305	16	321	3	162	199	185	187	33	681
Dec. 14	221	148	145	149	135	233	11	122	214	110	208	85	647
Dec. 15	327	217	98	243	153	89	9	186	191	184	168	348	668
Dec. 16	326	208	97	323	87	310	5	114	24	46	8	353	655
Average	243	175	69	220	71	204	9	127	130	157	119	193	625
Dec. 17	320	217	119	351	24	313	17	85	216	37	215	131	601
Dec. 18	333	205	42	345	38	260	9	139	216	36	201	201	570
Dec. 19	320	61	56	342	156	302	16	97	119	129	92	102	637
Dec. 20	331	227	12	290	75	122	6	114	232	171	202	209	631
Dec. 21	283	233	0	197	164	---	4	194	14	189	6	386	639
Dec. 22	304	185	8	334	121	306	24	158	217	165	202	155	637
Dec. 23	269	104	18	337	92	305	11	119	215	183	198	112	664
Average	308	176	36	314	93	268	12	130	176	130	159	185	626
Dec. 24	324	152	37	251	26	115	11	177	---	106	147	83	631
Dec. 25	336	237	20	338	62	232	34	68	---	53	122	297	---
Dec. 26	314	215	32	323	93	98	6	67	---	87	185	323	605
Dec. 27	311	73	6	180	162	210	4	163	---	134	165	314	655
Dec. 28	231	125	1	313	168	92	8	139	---	197	200	186	560
Dec. 29	333	211	70	139	160	115	6	---	---	208	35	67	518
Dec. 30	178	196	17	227	104	298	9	90	---	205	186	34	596
Dec. 31	334	127	31	53	68	18	40	---	---	148	189	315	---
Average	295	167	27	228	105	147	15	117	---	142	154	202	594

1960	Cape Hatteras, N. C.	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Corvallis, Oreg.	Davis, Calif.	Dodge City, Kans.	East Lansing, Mich.	El Paso, Tex.	Ely, Nev.	Flaming Gorge, Utah	Fort Worth, Tex.
Dec. 3	341	51	350	204	142	88	280	172	199	81	235	178	101
Dec. 4	337	157	335	34	120	165	113	273	41	374	163	131	49
Dec. 5	324	45	316	182	239	52	280	271	50	366	279	69	157
Dec. 6	(316)	67	299	13	193	169	281	104	51	353	290	240	75
Dec. 7	310	28	305	24	234	186	269	135	55	56	223	274	28
Dec. 8	213	148	217	98	247	178	270	118	169	42	150	261	31
Dec. 9	238	139	256	209	265	138	241	152	177	(236)	267	272	57
Average	(297)	91	297	109	206	139	248	175	106	(215)	230	204	71
Dec. 10	329	124	220	19	87	38	54	85	19	321	268	260	33
Dec. 11	67	181	40	18	88	21	263	153	91	367	263	236	100
Dec. 12	101	24	221	49	---	157	91	141	195	209	268	246	208
Dec. 13	360	86	337	146	288	89	78	221	114	154	263	256	176
Dec. 14	344	140	261	174	164	83	67	261	94	316	246	239	171
Dec. 15	107	90	33	82	110	108	102	309	15	347	223	278	161
Dec. 16	223	23	258	82	262	40	110	---	114	356	257	257	376
Average	219	95	196	81	167	77	109	195	92	296	255	253	175
Dec. 17	353	90	338	88	263	29	210	306	185	(328)	147	86	338
Dec. 18	342	180	326	134	238	24	97	291	152	351	149	218	333
Dec. 19	341	---	322	124	189	77	231	228	193	349	165	123	333
Dec. 20	327	123	222	49	96	56	173	247	71	356	258	252	246
Dec. 21	37	30	68	125	280	45	78	188	211	341	223	239	330
Dec. 22	352	149	333	192	216	54	118	---	172	350	250	216	309
Dec. 23	344	147	337	200	77	44	73	198	242	335	257	235	278
Average	300	120	278	131	194	47	140	243	175	(344)	207	196	310
Dec. 24	322	170	295	89	215	44	57	284	210	352	258	271	328
Dec. 25	338	88	316	183	243	31	58	292	193	317	262	226	341
Dec. 26	177	41	318	16	76	127	52	279	48	358	256	114	337
Dec. 27	299	155	295	154	176	106	230	81	221	352	248	157	98
Dec. 28	90	136	305	166	51	165	280	59	171	230	254	245	53
Dec. 29	124	92	219	60	122	172	258	317	131	145	270	264	85
Dec. 30	147	(111)	148	154	271	51	253	300	133	126	257	272	179
Dec. 31	269	126	115	148	109	101	224	269	157	356	269	282	110
Average	221	(115)	251	121	158	100	177	235	158	279	259	229	191

1960	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Lander, Wyo.	Laramie, Wyo.
Dec. 3	118	476	170	95	152	294	480	244	354	183	283	238	132
Dec. 4	190	431	120	238	84	297	453	162	343	87	218	184	167
Dec. 5	(86)	331	181	141	114	278	399	39	360	109	108	141	127
Dec. 6	(235)	357	128	250	73	249	371	18	359	86	182	271	250
Dec. 7	239	438	62	267	152	261	329	217	348	29	190	262	256
Dec. 8	238	349	233	221	139	166	197	139	241	95	36	274	247
Dec. 9	237	326	160	263	143	297	502	263	347	202	89	245	243
Average	(192)	387	151	211	122	263	390	155	336	113	158	231	203
Dec. 10	138	340	52	269	143	268	90	138	246	6	53	268	147
Dec. 11	57	61	60	190	140	16	138	43	351	77	346	288	243
Dec. 12	132	330	202	215	114	210	293	198	357	73	122	247	235
Dec. 13	178	355	147	265	28	302	397	223	352	120	288	241	217
Dec. 14	143	341	51	272	43	284	261	229	325	94	37	184	233
Dec. 15	178	185	165	268	143	69	98	58	338	108	62	245	249
Dec. 16	223	366	165	264	146	271	400	313	320	37	348	198	186
Average	150	283	120	249	108	203	240	172	327	74	179	239	216
Dec. 17	211	458	146	164	45	274	398	169	324	129	297	188	101
Dec. 18	189	419	46	240	54	282	347	227	337	181	329	194	211
Dec. 19	168	332	76	195	50	221	379	174	294	107	309	173	139
Dec. 20	(52)	108	72	263	119	251	225	59	358	152	259	221	210
Dec. 21	(59)	66	170	241	51	108	319	257	305	31	356	212	80
Dec. 22	(85)	575	73	251	66	300	369	213	349	194	341	196	124
Dec. 23	(100)	386	146	244	107	287	395	187	348	171	212	211	210
Average	(123)	335	104	228	70	246	347	184	331	138	301	199	153
Dec. 24	(69)	325	169	271	133	99	142	---	346	76	165	235	230
Dec. 25	(35)	463	119	263	112	274	282	---	349	171	62	227	218
Dec. 26	33	481	71	242	44	223	165	34	352	132	199	217	174
Dec. 27	31	121	61	272	129	209	262	155	338	164	34	171	168
Dec. 28	81	271	115	241	144	270	166	104	351	225	63	252	263
Dec. 29	236	225	108	272	111	187	154	162	361	8	42	237	189
Dec. 30	220	31	125	271	118	275	365	252	362	71	149	246	228
Dec. 31	222	53	76	275	37	203	72	58	287	172	137	252	213
Average	(116)	246	105	264	104	218	201	127	343	127	107	230	210

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

DECEMBER 1960

	Las Vegas, Nev.	Lexington, Ky.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Manhattan, Kans.	Matanuska, Alaska	Mauna Loa, Hawaii	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.
1960													
Dec. 3-----	291	326	280	311	307	209	125	14	243	129	333	164	290
Dec. 4-----	306	270	---	202	286	75	12	16	285	178	399	285	227
Dec. 5-----	321	289	25	294	289	149	237	10	176	134	276	391	219
Dec. 6-----	309	48	33	295	310	227	232	8	511	226	246	32	39
Dec. 7-----	158	188	65	308	311	221	233	3	503	194	180	35	129
Dec. 8-----	84	173	78	230	286	---	160	4	504	208	288	---	126
Dec. 9-----	210	314	255	274	276	195	213	2	516	194	339	---	285
Average-------	240	230	123	273	295	179	173	8	391	181	295	181	188
Dec. 10-----	272	250	28	124	140	54	15	11	512	110	369	---	240
Dec. 11-----	267	23	127	239	263	107	36	14	506	115	380	290	119
Dec. 12-----	289	243	332	292	292	244	279	13	508	142	300	56	267
Dec. 13-----	292	270	311	285	294	168	259	1	414	59	338	151	305
Dec. 14-----	298	286	202	272	290	207	238	7	470	54	382	242	149
Dec. 15-----	283	136	63	266	276	48	146	15	457	108	258	342	82
Dec. 16-----	291	237	313	274	292	194	234	9	491	116	379	347	283
Average-------	284	206	197	250	264	146	172	10	480	101	343	238	206
Dec. 17-----	291	300	332	287	284	208	233	32	491	36	410	328	277
Dec. 18-----	292	293	228	298	310	210	176	15	495	96	303	334	242
Dec. 19-----	262	224	330	275	286	149	169	14	439	172	397	328	190
Dec. 20-----	295	67	19	255	235	220	7	6	455	74	345	303	37
Dec. 21-----	189	227	314	284	264	227	237	8	388	36	277	335	256
Dec. 22-----	289	345	243	282	291	149	241	9	425	72	401	---	310
Dec. 23-----	294	269	271	282	303	---	65	10	(453)	65	221	---	147
Average-------	273	247	248	281	282	194	161	13	(450)	79	336	326	208
Dec. 24-----	296	80	298	288	299	205	215	20	(464)	63	191	330	105
Dec. 25-----	299	326	347	280	298	179	225	15	447	55	285	351	288
Dec. 26-----	299	59	324	286	295	200	216	12	491	92	316	319	118
Dec. 27-----	274	110	85	250	287	217	105	3	502	61	168	345	60
Dec. 28-----	257	151	37	288	310	---	35	8	496	157	322	32	29
Dec. 29-----	298	24	41	292	303	138	235	9	438	199	377	41	20
Dec. 30-----	302	235	317	282	299	217	235	5	342	198	306	28	252
Dec. 31-----	284	116	22	264	287	50	208	8	(314)	154	292	347	25
Average-------	289	138	184	279	297	172	184	10	(437)	122	282	224	112

	Newport, R. I.	New York, N. Y.	North Omaha, Nebr.	Oak Ridge, Tenn.	Oklahoma City Okla.	Page, Ariz.	Phoenix, Ariz.	Portland, Me.	Pullman, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	Salt Lake City, Utah
1960													
Dec. 3-----	211	154	171	262	83	113	197	209	46	143	300	167	174
Dec. 4-----	203	215	18	238	47	307	312	211	173	43	283	25	87
Dec. 5-----	193	154	67	190	245	334	304	183	206	152	337	28	220
Dec. 6-----	150	128	237	84	171	229	320	119	211	214	354	163	264
Dec. 7-----	171	106	239	147	58	122	317	95	188	112	341	78	255
Dec. 8-----	228	155	230	145	129	85	298	119	195	110	79	212	239
Dec. 9-----	232	193	92	278	170	99	---	205	74	200	296	---	248
Average-------	199	158	151	192	129	184	291	163	156	139	284	112	212
Dec. 10-----	137	184	85	224	30	281	301	144	83	188	126	---	262
Dec. 11-----	124	35	---	41	50	89	137	331	164	177	305	---	241
Dec. 12-----	62	58	236	285	245	203	299	19	---	222	336	---	225
Dec. 13-----	203	224	163	285	195	264	295	159	125	199	326	128	212
Dec. 14-----	219	173	218	254	149	310	298	205	98	166	320	167	202
Dec. 15-----	171	84	211	62	302	278	301	191	152	211	318	146	175
Dec. 16-----	23	32	227	287	328	135	288	20	38	202	304	104	197
Average-------	134	113	190	205	186	223	274	153	110	195	291	136	216
Dec. 17-----	215	193	225	271	312	224	307	228	49	151	325	84	---
Dec. 18-----	208	173	229	244	297	121	296	230	21	170	328	182	120
Dec. 19-----	103	39	163	203	313	291	300	89	149	94	330	82	38
Dec. 20-----	219	179	228	69	153	313	313	261	56	155	296	155	259
Dec. 21-----	16	6	247	213	184	272	275	13	136	128	312	143	222
Dec. 22-----	225	189	161	279	235	297	304	208	164	198	324	135	213
Dec. 23-----	186	138	119	249	230	298	305	209	99	178	328	90	228
Average-------	167	131	196	218	246	259	300	177	93	153	320	124	180
Dec. 24-----	128	65	223	91	308	299	301	206	82	194	324	79	220
Dec. 25-----	171	154	202	202	316	302	306	115	104	92	323	52	225
Dec. 26-----	199	184	198	55	318	289	310	195	56	97	326	115	122
Dec. 27-----	235	199	101	84	114	292	302	194	49	187	319	191	248
Dec. 28-----	223	105	73	61	60	215	305	219	39	196	270	69	243
Dec. 29-----	37	19	221	25	200	300	203	63	93	89	323	73	248
Dec. 30-----	197	164	232	271	303	303	291	169	50	125	331	96	237
Dec. 31-----	210	158	232	87	234	307	305	190	57	154	310	81	235
Average-------	175	131	185	109	238	288	290	169	66	142	316	95	222

	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Seattle, Wash.	Seattle-Tacoma, Wash.	Shreveport, La.	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Tucson, Ariz.	Washington, D. C. (Obs & Test Dev Ctr)
1960													
Dec. 3-----	112	303	167	170	20	35	266	---	229	---	387	114	223
Dec. 4-----	50	309	36	193	94	82	139	---	140	---	395	363	265
Dec. 5-----	158	318	47	179	86	119	34	---	210	---	320	365	236
Dec. 6-----	146	322	15	127	146	159	110	152	144	---	315	379	211
Dec. 7-----	50	328	131	174	121	137	---	140	47	---	295	378	117
Dec. 8-----	72	328	171	160	128	124	32	---	150	---	300	366	191
Dec. 9-----	64	303	35	204	---	112	141	175	240	---	264	237	274
Average-------	93	316	86	172	99	110	120	---	166	---	325	315	217
Dec. 10-----	201	79	177	171	137	102	30	162	119	---	334	(354)	232
Dec. 11-----	348	297	150	61	18	25	121	55	33	---	187	329	10
Dec. 12-----	83	307	183	61	23	71	226	51	172	---	177	363	---
Dec. 13-----	108	306	82	209	8	24	142	102	260	---	408	311	294
Dec. 14-----	87	280	42	177	114	153	52	156	219	---	357	339	262
Dec. 15-----	345	170	18	138	152	155	71	142	61	---	48	349	105
Dec. 16-----	356	298	82	18	14	45	320	50	165	---	308	346	259
Average-------	218	248	105	119	67	82	137	103	147	---	260	(342)	194
Dec. 17-----	338	305	95	184	40	71	311	44	129	---	409	350	229
Dec. 18-----	338	271	132	176	29	32	289	21	219	---	411	345	217
Dec. 19-----	284	299	137	68	116	107	275	111	186	---	401	346	117
Dec. 20-----	337	283	83	207	40	54	105	31	140	---	325	350	147
Dec. 21-----	359	222	176	5	97	79	314	83	141	---	130	348	121
Dec. 22-----	220	308	181	176	86	93	258	42	262	---	364	342	263
Dec. 23-----	55	307	---	174	126	145	276	30	199	---	322	341	264
Average-------	276	285	134	142	76	83	261	52	182	---	338	346	194
Dec. 24-----	335	173	91	135	11	23	291	54	103	272	299	353	163
Dec. 25-----	330	279	41	149	81	99	216	38	204	257	395	350	---
Dec. 26-----	183	312	175	175	15	39	131	45	116	258	339	349	229
Dec. 27-----	83	311	152	186	42	62	70	57	218	10	200	346	257
Dec. 28-----	42	317	86	193	53	49	34	54	226	11	310	332	232
Dec. 29-----	69	322	120	24	28	46	39	98	39	239	345	164	43
Dec. 30-----	---	318	90	185	30	36	141	74	144	280	---	299	234
Dec. 31-----	232	301	103	184	40	26	41	47	243	190	---	352	146
Average-------	182	292	107	154	38	48	120	59	162	190	315	318	186

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

TOTAL OZONE DATA

Total amount of ozone in the atmosphere, expressed in terms of integrated depth, in units of 10^{-3} centimeter. These data are given as daily averages obtained from measurements with a Dobson Ozone Spectrophotometer using the sun or zenith cloud (see explanation below) as a light source.

DECEMBER 1960

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bismarck, N. Dak.	340	---	318	---	---	342	---	---	307	300	---	---	294	---	423	---	---	319	---	---	313	309	---	283	---	---	334	341	---	---	332
Caribou, Maine	---	---	---	---	---	---	---	---	---	---	402	---	---	404	324	---	---	---	343	407	---	386	425	---	---	---	329	---	---	---	---
Fort Worth, Texas	264	254	---	---	---	---	---	---	---	---	---	---	---	---	---	246	263	264	270	---	300	353	335	317	291	261	---	---	---	---	---
Green Bay, Wis.	344	322	309	---	---	303	308	350	---	---	---	---	---	278	---	---	332	361	332	320	---	---	335	314	---	341	357	---	---	---	---
Mauna Loa, Hawaii	250	250	---	---	260	253	247	251	255	250	247	251	243	247	262	253	248	254	257	253	249	245	---	243	250	250	257	249	244	247	245

The spectrophotometer measures the total amount of ozone in the atmosphere, i. e., the amount contained in a vertical column of air extending from the ground to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column of air is expressed in terms of thickness it would occupy if it were compressed to standard pressure and temperature.

The standard method of observation is that using A (3055 Å and 3254 Å) and D (3176 Å and 3398 Å) wave length pairs. On cloudy days when no observations can be obtained directly upon the sun, observations are taken by using light from the zenith cloud. These observations are not quite as reliable as the sunlight observations, therefore, average values based upon zenith cloud observations are denoted with an asterisk. A detailed description of the spectrophotometer and observational procedures may be found in the "Observer's Handbook of the Ozone Spectrophotometer," Annals of the International Geophysical Year, Volume V, Pergamon Press, 1957.

CONDENSED CLIMATOLOGICAL SUMMARY

DELAYED DATA

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
May 1960										
Alaska	Ladd Air Force Base	92	24	Anaktuvak Pass	-1	4	Shearwater Bay	7.51	3 Stations	T
June 1960										
Alaska	Circle Hot Springs	83	25	3 Stations	20	12+	Little Port Walter	13.91	Teller	.12
Hawaii	Kaanapali	92	8	2 Stations	32	27+	Puohokamoa	17.82	9 Stations	.00
July 1960										
Alaska	Tanana FAA	90	13	Tok	21	20+	Yakutat WB AP	18.67	Wainwright	.04
Hawaii	Makaha Valley	94	25	Haleakala Summit	31	6	Kahana	14.85	6 Stations	.00
August 1960										
Alaska	Annette WB AP	90	8	Anaktuvuk Pass	21	23	Cordova	13.65	Port Heiden	.13
Hawaii	2 Stations	93	12+	Haleakala Summit	33	29	Pepeekeo A & F	26.20	8 Stations	.00
September 1960										
Alaska	Hollis	75	12	Anaktuvuk Pass	0	19	Little Port Walter	30.72	Wainwright	.10
Hawaii	Makaha Valley	93	26+	Haleakala Summit	31	14	Papaikou Mauka	24.35	Kaunakakai	.00
October 1960										
Alaska	3 Stations	61	18+	Anaktuvuk Pass	-22	14	Little Port Walter	41.29	Palmer 5NW	T
Hawaii	2 Stations	92	7+	Mauna Loa Slope Obs.	31	31+	N Wai Ditch	19.54	2 Stations	.04
November 1960										
Hawaii	Makaha Valley	90	2	Mauna Loa Slope Obsy	30	20	Puohokamoa 2	34.75	3 Stations	.00

See reference notes with current data.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
November 1960	Ft	Mb.	Mb.	°F	°F.	°F.	°F.	°F		°F				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
PACIFIC AREA																																
Majuro	10	1008.8	1009.1	86	78	81.8	---	88	12+	74	5	0	0	76	82	16.32	----	3.51	27	5	0.0	0	8.3	E	27	E	4	0	3	27	9.2	--
Yap	55	1000.7	1002.7	88	76	81.9	.1	90	7+	69	30	4	0	77	84	20.66	9.94	8.91	26	4	.0	0	5.4	NE	72	SW	30	0	4	26	9.3	30

See reference notes with current data.

STORM SUMMARY

DELAYED DATA

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ϕ ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
July 1960																													
Kansas														0	0	9	0												
Montana	1	1	0	0	1																								

See reference notes with current data.

CORRECTIONS

Month: December 1959

page 485: Gainesville, Fla. — Solar radiation, langleys should be as follows for period Dec. 24-31: 102, 295, 286, 347, 147, 377, 352, 303, Aug. 276.

Year: Annual 1959

page 86: The reference note for East Lansing, Mich., referring to doubtful data should be deleted, as data is accurate.

page 86: Solar radiation should be as follows: Atlanta 193; Blue Hill 125; Boston 127; Cape Hatteras 231, annual 469; Caribou 119, annual 318; Charleston 214, annual 364; Greensboro 209, annual 389; Griffin 235, annual 394; New York 116; Portland 148; Sayville 129; Albuquerque August 614, annual 516.

Month: July 1960

page Contents: Numbered Charts should read I-XVII

page 288: Oakland, Calif. — Heating degree days sould be 62.

Alamosa, Colo. — Heating degree days should be 41.

Month: November 1960

page 464: Fairbanks, Alaska — Heating degree days should be 1975, accumulated total 4292.

Waterloo, Iowa — Accumulated total should be 1395; for Oct. 591.

Missoula, Montana — Accumulated total should be 2012, Oct. 1055, Sept. 400.

Clayton, New Mexico — Accumulated total should be 1050, Oct. 416, Sept. 78, Aug. 15.

RAWINSONDE DATA

Average monthly values

DELAYED DATA

1/ CAMAGUEY, CUBA (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	13	122	18.5		58	4.7
1,000	13	153	19.3		60	6.4
950	13	598	19.7		77	18.5
900	13	1,064	17.2		79	17.9
850	13	1,551	14.8		73	11.5
800	13	2,063	13.0		80	8.2
750	13	2,600	11.4		79	9.7
700	13	3,179	9.1		77	8.9
650	13	3,786	6.6		69	7.8
600	13	4,443	2.5		46	7.0
550	13	5,128	- 2.1		54	6.6
500	13	5,892	- 7.2		43	5.1
450	12	6,698	-13.1		10	6.4
400	12	7,592	-20.0		330	5.6
350	12	8,568	-27.5		321	9.1
300	12	9,659	-36.2		302	15.3
250	12	10,900	-45.3		286	23.3
200	10	12,361	-55.1		282	33.8
175	10	13,203	-60.7		280	39.6
150	9	14,148	-66.2			
125	9	15,242	-70.7			
100	6	16,557	-74.8			
80						
60						
50						
40						
30						
25						
20						
15						
10						

2/ CAMAGUEY, CUBA (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	14	122	17.6		58	3.3
1,000	14	144	18.0		54	4.1
950	14	590	18.6		71	13.0
900	14	1,051	15.9		77	9.3
850	14	1,535	13.3		100	4.3
800	14	2,044	11.2		199	2.5
750	14	2,581	8.7		211	4.9
700	14	3,152	6.6		228	6.0
650	14	3,758	3.2		242	7.8
600	14	4,403	- .6		248	13.0
550	14	5,089	- 4.4		249	19.2
500	14	5,840	- 8.8		258	27.2
450	14	6,640	-14.7		262	29.0
400	14	7,531	-21.5		265	33.6
350	12	8,516	-28.1		265	41.2
300	12	9,605	-36.1		256	41.2
250	12	10,845	-45.7		252	49.0
200	11	12,306	-55.9			
175	11	13,146	-61.5			
150	11	14,090	-66.9			
125	10	15,190	-71.1			
100	10	16,501	-73.9			
80	10	17,801	-73.7			
60	10	19,492	-69.6			
50	9	20,591	-63.0			
40	7	21,982	-58.5			
30	5	23,824	-53.5			
25	5	25,003	-50.9			
20						
15						
10						

3/ MERIDA, MEXICO (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	11	23.4	95	84	6.4
1,000	30	110	23.9	91	90	8.7
950	30	559	22.9	84	117	15.2
900	30	1,032	20.6	77	123	14.2
850	30	1,526	18.1	70	124	11.1
800	30	2,044	15.5	64	124	8.7
750	30	2,587	12.4	60	127	7.6
700	30	3,166	9.2	52	125	6.0
650	30	3,774	5.5	49	117	5.2
600	30	4,427	1.8	47	91	5.4
550	30	5,117	- 2.0	44	67	4.7
500	30	5,877	- 6.4	42	37	3.9
450	30	6,690	-11.2	38	23	4.3
400	30	7,589	-17.2		352	5.4
350	30	8,576	-24.3		340	6.6
300	30	9,681	-32.0		323	11.9
250	30	10,943	-41.6		298	17.7
200	30	12,417	-53.5		295	18.7
175	30	13,263	-59.9		300	16.7
150	30	14,210	-66.4		322	13.4
125	30	15,297	-72.2		358	13.2
100	30	16,599	-74.2		38	15.7
80	29	17,907	-71.3		76	20.6
60	29	19,640	-63.6		86	25.6
50	29	20,769	-59.9		86	30.9
40	29	22,179	-55.1		90	37.9
30	26	24,034	-50.2		91	44.1
25	25	25,229	-47.9		87	45.1
20	25	26,711	-44.8		86	45.1
15	22	28,647	-41.3		84	49.5
10	10	31,442	-35.8			

3/ SWAN ISLAND, W. I. (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	10	27.1	85	102	6.0
1,000	29	102	26.2	85	99	7.2
950	29	553	23.2	85	108	11.1
900	29	1,025	20.1	83	112	11.1
850	29	1,518	17.4	79	115	11.7
800	29	2,035	14.9	72	117	11.5
750	29	2,575	12.0	68	117	10.7
700	29	3,155	8.9	64	118	9.3
650	29	3,762	5.3	63	120	9.9
600	29	4,416	1.6	61	126	8.9
550	29	5,103	- 2.1	58	125	7.6
500	29	5,863	- 6.5	50	128	3.5
450	29	6,670	-11.5	42	97	4.5
400	29	7,576	-17.1	40	27	1.4
350	29	8,564	-24.0	41	318	2.9
300	29	9,670	-32.4	39	305	3.9
250	29	10,930	-42.3		304	7.2
200	28	12,402	-54.4		295	10.7
175	27	13,246	-61.0		309	12.6
150	27	14,188	-67.8		336	16.7
125	23	15,263	-73.1		9	14.0
100	22	16,565	-74.3		42	16.1
80	21	17,876	-70.7		75	19.8
60	21	19,604	-64.6		85	23.3
50	21	20,726	-60.8		87	30.9
40	20	22,123	-57.5		95	41.4
30	18	23,964	-52.6		96	48.6
25	18	25,150	-49.9		96	49.9
20	14	26,612	-45.2		88	45.3
15	12	28,532	-41.8			
10						

3/ YUMA, ARIZ. (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	105	25.9	26	46	1.2
1,000	30	58				
950	30	512	30.5	19	269	7.6
900	30	995	28.9	18	264	10.1
850	30	1,499	25.4	19	250	9.1
800	30	2,027	21.1	24	246	8.5
750	30	2,576	16.4	30	238	9.1
700	30	3,162	11.4	35	224	9.1
650	30	3,773	6.2	39	210	8.9
600	30	4,426	.9	42	190	9.3
550	30	5,118	- 4.5	44	198	8.2
500	30	5,862	- 9.5	38	215	8.7
450	30	6,663	-15.1		209	8.0
400	30	7,546	-21.9		228	5.8
350	30	8,515	-29.4		228	5.8
300	30	9,597	-37.6		243	6.6
250	30	10,831	-46.6		230	12.6
200	30	12,282	-54.9		238	21.6
175	29	13,135	-58.1		239	28.8
150	27	14,098	-62.4		240	27.6
125	22	15,210	-66.4		238	22.2
100	21	16,553	-68.6		252	11.3
80	21	17,896	-66.2		184	4.3
60	20	19,660	-61.5		90	13.2
50	20	20,801	-57.8		92	20.2
40	19	22,217	-54.8		89	20.8
30	19	24,070	-51.6		90	21.6
25	19	25,259	-49.5		83	22.0
20	15	26,736	-47.4		91	24.1
15	11	28,638	-45.3		88	26.8
10						

4/ MERIDA, MEXICO (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	11	22.7	96	95	2.9
1,000	31	126	24.2	88	107	7.6
950	31	575	23.1	79	123	14.2
900	31	1,048	20.7	74	123	13.8
850	31	1,542	18.1	69	119	11.9
800	31	2,060	15.1	65	121	11.5
750	31	2,602	12.1	61	118	10.9
700	31	3,180	8.7	61	117	10.5
650	31	3,786	4.9	60	112	11.5
600	31	4,439	1.2	56	104	12.0
550	31	5,125	- 2.9	56	97	12.2
500	31	5,885	- 7.3	54	88	13.4
450	31	6,693	-11.9	45	79	13.6
400	31	7,593	-17.6	40	77	12.8
350	31	8,580	-24.4	34	70	11.9
300	31	9,684	-32.6		60	8.9
250	31	10,942	-42.6		56	7.0
200	31	12,410	-54.2		41	11.1
175	31	13,254	-60.4		46	10.3
150	31	14,200	-66.8		59	14.0
125	31	15,286	-71.7		62	18.7
100	31	16,601	-71.7		74	23.7
80	31	17,924	-68.7		88	27.0
60	31	19,670	-62.7		85	35.4
50	31	20,805	-58.7		90	42.9
40	31	22,217	-54.7		91	46.4
30	31	24,081	-49.2		92	46.8
25	27	25,280	-47.3		87	49.5
20	26	26,764	-45.1		84	48.6
15	20	28,701	-42.6		82	55.8
10	6	31,483	-38.7			

4/ YUMA, ARIZ. (994 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	105	28.8	40	7	0.6
1,000	31	74				
950	31	531	30.9	31	256	5.1
900	31	1,016	28.8	29	245	5.8
850	31	1,521	25.3	31	230	5.6
800	31	2,050	21.3	33	191	4.9
750	31	2,597	17.0	35	178	5.6
700	31	3,188	12.3	39	171	6.4
650	31	3,800	7.3	44	160	8.2
600	31	4,457	2.1	47	151	9.3
550	31	5,151	- 2.9	47	146	9.1
500	31	5,901	- 8.2	40	135	9.3
450	31	6,704	-13.9		150	7.4
400	31	7,596	-19.9		184	6.6
350	31	8,573	-26.5		208	11.1
300	31	9,669	-34.3		206	13.8
250	31	10,921	-43.1		207	16.9
200	31	12,390	-53.7		212	16.9
175	30	13,236	-59.4		220	17.3
150	30	14,189	-64.6		235	15.0
125	24	15,296	-68.3		209	5.4
100	21	16,629	-69.2		109	6.4
80	20	17,969	-66.1		86	16.9
60	19	19,739	-59.6		90	21.0
50	18	20,889	-56.6		86	23.5
40	16	22,317	-54.0		89	27.4
30	16	24,177	-51.1		87	26.8
25	16	25,369	-49.0		86	27.0
20	10	26,823	-47.6			
15						
10						

5/ CAMAGUEY, CUBA (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	22	122	23.4	94	74	2.1
1,000	22	147	23.4	93	68	3.7
950	22	595	22.6	82	89	18.5
900	22	1,068	20.3	73	93	18.8
850	22	1,561	17.7	64	96	14.2
800	22	2,078	14.8	57	98	12.0
750	22	2,618	11.7	53	98	11.9
700	22	3,197	8.3	47	102	12.0
650	22	3,800	4.7	46	105	12.2
600	22	4,456	1.1	41	104	12.0
550	22	5,146	- 2.9	40	97	10.5
500	22	5,901	- 7.7	40	92	9.9
450	22	6,710	-12.6	36	96	9.7
400	22	7,604	-18.7	37	75	7.0
350	22	8,588	-25.7		46	7.2
300	22	9,688	-33.8		32	8.7
250	22	10,941	-43.8		24	9.9
200	22	12,404	-55.2		6	9.9
175	22	13,246	-60.7		14	8.0
150	21	14,194	-65.5		27	5.8
125	19	15,294	-68.3		56	8.2
100	18	16,628	-70.3			
80	18	17,963	-67.7			
60	18	19,719	-62.1			
50	18	20,854	-59.4			
40	17	22,272	-54.9			
30	13	24,130	-51.2			
25	9	25,337	-48.7			
20	7	26,821	-44.3			
15	5	28,774	-40.1			
10						

5/ HAVANA, CUBA (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	49	24.5	93	85	3.3
1,000	31	134	25.4	86	94	6.0
950	31	585	23.7	76	107	14.4
900	31	1,059	20.9	73	107	14.0
850	31	1,552	18.0	70	106	11.7
800	31	2,070	15.1	62	104	11.3
750	31	2,611	12.1	56	107	10.7
700	31	3,191	8.9	53	113	8.7
650	31	3,796	5.2	50	111	8.9
600	31	4,451	1.4	49	101	8.7
550	31	5,141	- 2.7	49	101	8.0
500	31	5,898	- 7.3	51	104	6.2
450	31	6,705	-12.5	50	95	6.2
400	31	7,604	-18.2	45	91	6.4
350	31	8,588	-24.9	41	90	4.7
300	31	9,691	-33.2	39	96	3.7
250	31	10,947	-43.0		49	.6
200	31	12,413	-54.7		326	4.5
175	27	13,249	-60.8		326	5.1
150	26	14,195	-65.6		355	5.8
125	26	15,294	-68.3		48	8.4
100	26	16,633	-69.0		86	14.6
80	26	17,970	-67.3		88	21.6
60	26	19,728	-61.8		86	30.7
50	26	20,865	-58.5		92	34.8
40	26	22,278	-55.6		95	40.2
30	25	24,134	-50.2		91	41.4
25	24	25,329	-48.2		90	42.6
20	23	26,802	-46.9			
15	16	28,705	-45.3			
10						

5/ MERIDA, MEXICO (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	11	23.4	98	93	4.3
1,000	31	122	24.2	87	102	9.7
950	31	572	23.4	79	117	15.9
900	31	1,046	21.0	74	120	16.1
850	31	1,540	18.3	67	115	14.8
800	31	2,058	15.5	62	116	14.0
750	31	2,598	12.6	56	115	13.0
700	31	3,180	9.4	53	112	12.6
650	31	3,789	5.6	56	109	10.9
600	31	4,443	1.7	54	108	10.5
550	31	5,132	- 2.4	54	100	9.9
500	31	5,892	- 6.9	52	87	10.9
450	31	6,700	-11.7	47	73	10.3
400	31	7,601	-17.3	43	69	9.7
350	31	8,588	-24.0	35	59	6.6
300	31	9,695	-32.1		37	4.7
250	31	10,955	-42.2		338	4.5
200	31	12,425	-54.0		328	6.8
175	31	13,268	-60.6		332	10.3
150	31	14,213	-66.5		347	10.5
125	31	15,303	-70.3		32	11.5
100	31	16,628	-69.8		70	20.0
80	31	17,958	-68.3		88	25.8
60	31	19,708	-62.7		85	36.1
50	31	20,841	-58.9		86	42.9
40	30	22,254	-55.1		91	44.5
30	26	24,111	-50.7		89	46.0
25	26	25,304	-48.6		87	46.0
20	24	26,781	-46.6		85	46.8
15	19	28,680	-45.2		84	50.1
10	5	31,444	-38.9			

5/ N. Y. INT. AP, IDLEWILD (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	20.0	90	338	3.3
1,000	31	149	19.6	83	340	3.9
950	31	591	18.7	72	337	4.3
900	31	1,054	16.6	69	282	6.8
850	31	1,540	14.1	67	284	9.1
800	31	2,051	11.6	63	280	12.2
750	31	2,587	9.1	57	275	15.2
700	31	3,159	6.3	50	270	17.3
650	31	3,761	3.3	45	269	19.2
600	31	4,410	.2	42	268	18.5
550	31	5,098	- 3.9	38	265	20.6
500	31	5,850	- 8.8		263	23.3
450	31	6,652	-14.1		260	27.2
400	31	7,544	-20.0		259	29.3
350	31	8,521	-26.5		261	31.1
300	31	9,617	-34.6		255	37.9
250	31	10,866	-44.0		257	40.4
200	31	12,330	-54.3		261	42.6
175	31	13,176	-58.8		263	39.6
150	31	14,137	-62.0		266	32.8
125	31	15,259	-63.9		267	23.7
100	31	16,627	-63.1		273	16.3
80	31	18,012	-59.7		298	4.7
60	31	19,828	-55.5		84	4.1
50	31	20,996	-53.7		89	8.5
40	29	22,439	-51.1		81	9.5
30	28	24,323	-48.4		88	14.2
25	27	25,529	-46.7		87	16.3
20	26	27,017	-44.5		89	18.3
15	17	28,952	-41.2			
10						

5/ SWAN ISLAND, W. I. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	10	27.1	85	85	7.8
1,000	31	114	26.5	84	82	11.3
950	31	567	23.2	84	96	17.1
900	31	1,037	20.1	79	106	19.8
850	31	1,529	17.2	75	105	20.2
800	31	2,045	14.6	65	103	18.8
750	31	2,587	12.1	55	104	18.8
700	31	3,165	8.9	53	101	17.5
650	31	3,770	5.4	52	104	16.1
600	31	4,425	1.7	50	105	14.4
550	31	5,112	- 2.3	47	106	13.0
500	31	5,873	- 6.6	43	99	11.7
450	31	6,683	-11.7	38	100	10.3
400	31	7,581	-17.7	39	93	8.2
350	31	8,566	-24.6	40	75	5.2
300	31	9,670	-33.0	40	51	3.5
250	31	10,925	-43.1		354	2.9
200	30	12,388	-55.4		333	5.1
175	27	13,230	-62.0		329	10.3
150	26	14,170	-68.5		355	10.5
125	25	15,253	-71.5		51	7.4
100	25	16,567	-72.8		93	13.8
80	24	17,879	-70.4		93	24.1
60	23	19,609	-64.4		89	34.4
50	19	20,726	-62.0		87	45.9
40	18	22,115	-57.8		92	52.7
30	16	23,947	-53.4		97	51.5
25	16	25,125	-51.6		97	54.2
20	16	26,580	-49.4		94	52.3
15	16	28,479	-46.0		90	52.3
10	5	31,168	-42.8			

5/ YUMA, ARIZ. (993 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	105	28.6	48	88	0.8
1,000	31	67				
950	31	519	29.1	40	212	3.1
900	31	1,005	26.8	39	209	8.0
850	31	1,507	24.0	38	206	8.9
800	31	2,034	20.5	39	205	6.4
750	31	2,584	16.5	40	189	7.4
700	31	3,171	12.2	44	178	7.2
650	31	3,785	7.6	46	173	6.8
600	31	4,442	3.0	45	168	7.4
550	31	5,137	- 1.3	45	152	6.0
500	31	5,894	- 6.2	40	153	4.9
450	31	6,705	-11.2		196	2.1
400	31	7,604	-17.7		229	2.5
350	31	8,590	-24.6		225	4.9
300	31	9,693	-32.9		232	11.5
250	31	10,951	-42.3		227	17.5
200	29	12,422	-53.7		227	24.3
175	29	13,269	-59.6		229	26.6
150	29	14,219	-65.7		226	24.7
125	27	15,313	-70.0		229	18.7
100	25	16,640	-69.2		241	4.5
80	25	17,984	-65.4		120	6.0
60	23	19,765	-59.4		89	15.5
50	23	20,913	-57.0		83	19.6
40	23	22,333	-54.9		83	24.3
30	22	24,185	-52.1		86	27.4
25	19	25,366	-50.4		84	27.4
20	15	26,824	-49.0		91	30.7
15						
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6/ BARTER IS., ALASKA (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	15	- 1.3	95	43	1.9
1,000	30	106	- 1.9	94	50	3.1
950	30	509	- 3.3	88	41	2.1
900	30	939	- 4.9	86	314	2.5
850	30	1,387	- 6.3	80	284	3.9
800	30	1,860	- 8.7	75	269	3.7
750	30	2,355	-11.2	74	269	5.6
700	30	2,885	-13.7	70	268	8.7
650	30	3,439	-16.8	66	261	9.9
600	30	4,041	-20.5	66	255	13.0
550	30	4,672	-24.5	59	256	13.2
500	30	5,367	-29.2	58	255	16.9
450	30	6,103	-33.9	55	253	21.0
400	29	6,938	-39.1	57	250	24.7
350	29	7,841	-45.3		250	31.5
300	29	8,855	-51.4		250	38.5
250	28	10,040	-52.6		247	38.7
200	28	11,496	-48.6		254	27.6
175	28	12,376	-48.0		258	24.1
150	28	13,393	-48.0		260	20.4
125	27	14,594	-48.2		262	18.5
100	27	16,064	-48.2		262	19.0
80	28	17,532	-48.8		266	17.1
60	27	19,417	-50.0		265	17.7
50	26	20,604	-50.6		270	18.1
40	26	22,055	-51.2		272	17.3
30	24	23,917	-51.3		272	22.2
25	23	25,095	-50.8		272	22.5
20	19	26,546	-49.8		269	21.2
15	8	28,429	-48.1			
10						

6/ CAMAGUEY, CUBA (999 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	122	22.9	95	87	0.6
1,000	30	116			63	1.9
950	30	566	23.3	80	102	7.2
900	30	1,038	20.8	76	103	6.2
850	30	1,532	17.9	74	104	5.8
800	30	2,050	15.0	69	112	4.5
750	30	2,588	12.2	65	108	4.5
700	30	3,171	9.3	59	107	3.7
650	30	3,778	5.7	60	117	2.9
600	30	4,435	1.9	57	112	2.3
550	30	5,123	- 2.2	58	127	2.5
500	30	5,885	- 6.6	53	108	2.7
450	30	6,695	-11.2	41	81	2.5
400	30	7,599	-17.0	37	82	3.3
350	30	8,589	-23.6		48	5.6
300	30	9,698	-32.0		37	6.4
250	30	10,960	-42.0		41	9.5
200	30	12,433	-54.3		41	11.3
175	30	13,277	-61.0		33	13.2
150	28	14,221	-67.3		54	11.9
125	27	15,308	-72.7		65	15.7
100	27	16,612	-73.4			
80	25	17,934	-68.8			
60	22	19,686	-61.7			
50	19	20,820	-59.1			
40	14	22,228	-55.8			
30	7	24,083	-51.8			
25	5	25,266	-50.4			
20	5	26,735	-46.3			
15						
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

DELAYED DATA

6/ HAVANA, CUBA (1006 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	49	24.7	91	140	1.2
1,000	30	103	25.2	88	124	2.1
950	30	555	23.8	80	136	1.9
900	30	1,029	21.1	78	129	1.7
850	30	1,523	18.1	75	167	2.7
800	30	2,041	15.1	71	187	2.5
750	30	2,577	12.0	67	202	2.7
700	30	3,162	9.1	63	215	2.3
650	30	3,766	5.6	60	240	2.7
600	30	4,425	1.9	57	280	1.2
550	30	5,118	- 2.2	56	321	1.6
500	30	5,876	- 6.6	51	293	1.6
450	30	6,684	-11.5	49	296	3.1
400	30	7,589	-16.8	41	279	1.9
350	30	8,579	-23.5	34	230	1.4
300	30	9,688	-32.0		156	1.4
250	30	10,948	-42.1		176	3.1
200	30	12,421	-53.8		169	4.3
175	27	13,268	-60.4		169	5.2
150	26	14,214	-66.5		92	2.9
125	26	15,302	-72.2		71	6.6
100	24	16,608	-73.1		76	12.8
80	24	17,932	-68.0		90	16.9
60	24	19,689	-61.5		85	22.7
50	22	20,822	-57.9		85	28.6
40	21	22,240	-55.2		95	35.2
30	18	24,096	-50.5		97	34.8
25	15	25,290	-48.8		90	30.9
20	13	26,765	-46.9			
15						

6/ MERIDA, MEXICO (1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	11	22.6	97	142	4.1
1,000	28	111	24.0	88	118	3.7
950	28	559	23.2	79	129	6.4
900	28	1,034	20.7	75	137	5.8
850	28	1,527	17.9	74	136	5.8
800	28	2,045	15.0	72	140	5.1
750	28	2,590	12.0	70	150	6.0
700	28	3,166	8.9	68	153	4.7
650	28	3,773	5.5	66	145	4.5
600	28	4,428	1.6	66	133	2.7
550	28	5,120	- 2.4	65	116	2.9
500	28	5,877	- 6.7	57	116	2.5
450	28	6,688	-11.5	51	156	1.7
400	28	7,588	-17.0	49	192	.8
350	28	8,577	-23.7	44	254	2.1
300	27	9,686	-32.0		255	3.9
250	27	10,947	-42.1		271	6.6
200	27	12,418	-54.1		285	8.4
175	27	13,262	-60.7		283	11.1
150	27	14,206	-67.1		293	6.2
125	27	15,290	-72.5		55	5.2
100	27	16,594	-72.8		78	14.4
80	27	17,914	-68.8		89	20.6
60	27	19,664	-61.7		85	26.4
50	27	20,800	-59.3		85	32.8
40	25	22,210	-55.4		88	35.8
30	24	24,061	-51.4		91	34.4
25	23	25,246	-49.9		91	35.2
20	22	26,712	-47.5		85	33.2
15	20	28,630	-43.7		76	39.6

6/ SWAN ISLAND, W. I. (1010 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	10	26.9	85	101	4.7
1,000	30	103	26.4	84	96	5.8
950	30	553	23.3	81	106	9.7
900	30	1,026	20.5	74	110	9.1
850	30	1,519	17.7	71	107	8.9
800	30	2,036	14.9	68	102	8.9
750	30	2,577	12.2	62	103	8.7
700	30	3,156	9.2	55	104	8.5
650	30	3,761	5.7	53	109	8.9
600	30	4,417	1.9	53	109	8.7
550	30	5,104	- 2.1	48	105	7.4
500	30	5,865	- 6.7	48	102	8.2
450	30	6,673	-11.5	43	91	8.4
400	30	7,574	-17.4	39	92	9.1
350	30	8,561	-24.1	33	90	8.2
300	30	9,667	-32.5		81	7.4
250	30	10,924	-42.7		94	8.7
200	30	12,391	-54.7		79	9.5
175	30	13,232	-61.5		73	9.7
150	29	14,172	-68.0		73	12.4
125	29	15,250	-73.9		78	15.0
100	28	16,549	-74.3		83	21.0
80	28	17,858	-70.5		86	21.0
60	27	19,595	-64.1		82	28.2
50	27	20,718	-60.9		86	35.8
40	26	22,115	-57.6		91	41.0
30	25	23,949	-53.7		91	41.2
25	25	25,126	-51.4		92	39.4
20	23	26,568	-48.9		90	43.3
15	21	28,475	-44.6		87	40.8

6/ TAMPA, FLA. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	8	23.8	92	57	4.3
1,000	30	120	23.9	88	78	7.2
950	30	570	22.3	83	111	6.8
900	30	1,039	19.8	80	117	5.6
850	30	1,532	17.2	75	130	3.9
800	30	2,048	14.4	73	141	3.7
750	30	2,589	11.6	70	154	3.5
700	30	3,167	8.7	66	154	2.7
650	30	3,777	5.1	64	205	1.7
600	30	4,427	1.4	60	211	3.9
550	30	5,117	- 2.5	57	233	3.5
500	30	5,876	- 6.7	54	242	3.5
450	30	6,686	-11.2	43	254	4.9
400	30	7,589	-17.0	38	254	6.6
350	30	8,578	-23.9	33	241	8.9
300	30	9,686	-32.1		237	13.4
250	30	10,949	-41.9		235	17.7
200	30	12,425	-53.5		237	19.2
175	30	13,273	-59.6		236	15.2
150	29	14,221	-65.7		245	11.7
125	29	15,317	-70.1		242	6.8
100	28	16,635	-71.5		77	4.1
80	28	17,967	-66.5		79	8.9
60	28	19,736	-60.4		81	16.9
50	27	20,878	-57.8		91	21.6
40	25	22,297	-54.6		93	21.6
30	18	24,158	-50.5		89	24.7
25	16	25,354	-48.5		86	26.6
20	11	26,821	-46.5			
15	10	28,747	-44.6			

6/ YUMA, ARIZ. (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	27	105	25.6	43	68	1.9
1,000	27	77				
950	27	527	29.2	32	261	3.5
900	27	1,012	26.4	33	266	4.5
850	27	1,513	22.9	35	223	2.7
800	27	2,037	18.9	38	170	4.5
750	27	3,584	14.4	42	172	5.8
700	27	3,165	9.8	43	181	7.8
650	27	3,775	5.8	38	191	8.4
600	27	4,427	1.9		205	7.4
550	27	5,122	- 2.4		218	8.5
500	27	5,872	- 7.7		238	10.7
450	27	6,681	-13.7		244	13.6
400	27	7,568	-19.8		247	18.3
350	27	8,546	-27.0		253	22.2
300	27	9,639	-35.2		252	27.0
250	26	10,883	-44.2		259	33.0
200	26	12,349	-53.7		264	38.5
175	26	13,196	-59.1		266	35.6
150	26	14,150	-64.6		269	29.9
125	26	15,251	-69.3		271	20.0
100	26	16,578	-69.8		281	9.1
80	26	17,916	-66.7		351	2.1
60	23	19,687	-59.8		75	10.1
50	22	20,833	-57.4		80	11.9
40	22	22,250	-55.2		79	15.0
30	20	24,096	-52.7		86	16.9
25	20	25,278	-50.6		90	15.7
20	16	26,736	-48.6		98	16.9
15						

7/ HAVANA, CUBA (1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	26	49	24.0	92	78	1.7
1,000	26	110	24.4	89	87	2.7
950	26	560	23.0	82	107	4.7
900	26	1,033	20.1	80	95	4.1
850	26	1,525	17.2	77	131	2.1
800	26	2,041	14.3	73	171	3.9
750	26	2,580	11.6	59	200	5.1
700	26	3,161	8.6	54	228	4.1
650	26	3,765	5.6	46	233	4.9
600	26	4,422	1.9	45	241	4.3
550	26	5,111	- 2.1	40	275	4.7
500	26	5,872	- 6.8	36	286	6.8
450	26	6,680	-11.9	36	287	8.0
400	26	7,581	-17.5	31	291	10.7
350	26	8,568	-24.4		299	17.3
300	26	9,672	-32.8		296	20.0
250	26	10,930	-42.7		300	27.2
200	25	12,395	-54.6		312	28.6
175	25	13,237	-61.0		315	32.8
150	25	14,180	-67.4		309	28.2
125	25	15,263	-72.9		314	22.2
100	23	16,568	-73.2		317	10.7
80	22	17,886	-68.7		15	2.3
60	20	19,635	-62.0		87	11.1
50	20	20,771	-58.5		81	12.0
40	20	22,186	-55.0		80	15.3
30	19	24,039	-51.6			
25	15	25,222	-50.2			
20	12	26,696	-47.5			
15	8	28,613	-44.2			
10						

8/ JACKASS FLATS, NEV. (893 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,100	6.1	53	29	5.8
1,000	30	161				
950	30	586				
900	30	1,035				
850	30	1,508	8.5	40	104	2.9
800	30	2,007	5.5	40	176	5.6
750	30	2,528	3.0	36	211	7.2
700	30	3,088	.4	32	232	10.7
650	30	3,671	- 2.9	30	255	12.8
600	30	4,309	- 6.4	30	251	15.9
550	30	4,973	-10.7	31	253	19.0
500	29	5,711	-16.1		257	23.9
450	29	6,485	-21.9		256	27.0
400	29	7,353	-28.7	32	256	30.5
350	29	8,295	-35.7		260	34.2
300	29	9,349	-43.4		262	38.9
250	29	10,554	-51.1		262	45.7
200	29	11,984	-57.0		263	47.2
175	29	12,825	-58.9		261	48.6
150	28	13,792	-60.5		259	48.4
125	28	14,920	-63.1		259	44.1
100	28	16,287	-64.5		260	40.0
80	28	17,650	-64.7		263	29.7
60	26	19,409	-63.8		267	21.4
50	26	20,529	-63.2		269	19.6
40	26	21,904	-62.2		267	17.1
30	24	23,690	-60.3		271	15.2
25	22	24,835	-59.0		273	13.6
20	20	26,238	-58.0		268	15.0
15	14	28,032	-57.4		273	15.9
10	5	30,625	-54.8			

8/ MERIDA, MEXICO (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	11	19.4	97	57	5.1
1,000	30	144	22.9	81	62	8.5
950	30	589	20.7	76	66	10.9
900	30	1,058	18.0	73	61	9.7
850	30	1,546	15.6	64	50	8.0
800	30	2,059	13.3	53	57	4.9
750	30	2,595	10.9	48	69	4.3
700	30	3,174	8.0	37	52	2.9
650	30	3,778	4.1	42	73	2.5
600	30	4,430	.6	42	51	1.4
550	30	5,119	- 3.1	38	36	2.1
500	30	5,873	- 7.4		44	3.5
450	30	6,683	-12.2		8	2.1
400	30	7,580	-18.0		309	3.1
350	30	8,564	-25.1		291	7.0
300	30	9,664	-33.8		274	9.5
250	30	10,915	-44.0		259	11.7
200	29	12,372	-55.8		252	15.9
175	29	13,210	-61.7		254	15.9
150	29	14,152	-67.1		261	15.2
125	27	15,240	-71.1		262	12.6
100	23	16,548	-74.5		289	8.0
80	23	17,844	-73.6		31	6.4
60	22	19,550	-66.9		75	9.9
50	20	20,666	-62.9		72	5.2
40	18	22,058	-57.4		72	3.7
30	16	23,897	-52.7		54	2.1
25	16	25,077	-51.8		21	2.3
20	14	26,518	-50.4		339	4.3
15	9	28,423	-44.2			
10						

8/ ST. PAUL IS., ALASKA (1000 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	10	- 0.7	81	342	1.9
1,000	30	11			8	3.1
950	30	416	- 2.9	73	96	1.4
900	30	846	- 6.2	76	149	2.9
850	30	1,290	- 9.4	74	195	4.3
800	30	1,757	-11.9	64	209	9.1
750	30	2,246	-14.6	58	252	8.5
700	30	2,768	-17.6	55	257	9.1
650	30	3,315	-20.8	53	259	11.1
600	30	3,907	-24.4	50	244	15.0
550	30	4,530	-28.1	47	244	18.3
500	30	5,214	-32.4		246	21.2
450	30	5,944	-37.2		245	21.2
400	30	6,756	-42.4		240	18.7
350	30	7,648	-47.4		219	19.0
300	30	8,656	-51.8		221	23.7
250	30	9,838	-51.4		229	23.5
200	28	11,286	-49.9		233	22.2
175	28	12,160	-49.8		239	20.4
150	28	13,171	-49.1		241	21.4
125	28	14,367	-49.0		244	17.5
100	28	15,834	-48.7		244	19.2
80	28	17,298	-49.3		234	13.4
60	27	19,177	-50.1		228	12.0
50	27	20,366	-50.6		211	10.7
40	27	21,818	-51.1		203	4.7
30	26	23,684	-51.0		154	5.1
25	26	24,870	-50.9		145	4.7
20	24	26,325	-50.9		114	5.4
15	16	28,244	-50.5			
10						

8/ SWAN ISLAND, W. I. (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	10	26.2	83	43	6.4
1,000	30	116	25.6	82	44	9.9
950	30	565	22.5	81	49	11.9
900	30	1,036	19.5	78	57	11.5
850	30	1,527	16.7	72	67	9.5
800	30	2,043	14.1	63	73	9.1
750	30	2,581	11.5	56	74	8.5
700	30	3,160	8.7	53	77	8.9
650	30	3,765	5.3	50	78	8.5
600	30	4,419	1.4	50	79	7.6
550	30	5,108	- 2.4	48	72	5.4
500	30	5,867	- 6.7	42	73	3.9
450	30	6,676	-11.7	37	76	3.3
400	30	7,577	-17.6		78	2.5
350	30	8,563	-24.6		235	1.4
300	30	9,666	-33.2		265	5.4
250	30	10,921	-43.2		233	11.7
200	29	12,384	-55.5		228	17.9
175	29	13,223	-62.0		238	15.3
150	29	14,163	-67.9		232	13.4
125	29	15,245	-73.1		264	10.5
100	29	16,539	-77.2		272	3.9
80	29	17,819	-76.3		73	6.6
60	29	19,505	-67.6		74	12.8
50	29	20,615	-63.1		84	13.8
40	29	22,001	-59.3		87	16.9
30	25	23,824	-54.7		89	21.4
25	25	24,996	-52.5		91	20.2
20	25	26,445	-50.1		80	15.3
15	20	28,342	-45.1		182	1.9
10	8	31,018	-43.5			

8/ YUMA, ARIZ. (1001 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	105	10.9	46	23	2.9
1,000	29	137			20	3.3
950	29	573	16.7	37	338	6.6
900	29	1,031	14.1	38	347	2.5
850	29	1,510	11.4	36	255	2.7
800	29	2,014	9.0	30	227	6.4
750	29	2,545	6.2		224	8.2
700	29	3,108	3.2		240	10.1
650	29	3,703	- .4		245	13.0
600	29	4,340	- 4.4		247	16.7
550	29	5,014	- 8.9		255	18.3
500	29	5,751	-14.0		255	23.9
450	29	6,537	-19.6		252	31.5
400	29	7,406	-26.2		251	36.5
350	29	8,359	-33.3		252	42.4
300	29	9,424	-41.1		255	50.3
250	29	10,640	-49.6		256	53.8
200	29	12,073	-57.3		253	60.8
175	26	12,917	-59.6		254	64.9
150	23	13,874	-62.0		256	62.4
125	22	15,003	-64.8		253	53.2
100	18	16,349	-66.7		252	44.5
80	14	17,696	-66.6		260	33.4
60	13	19,449	-63.6		263	25.6
50	13	20,569	-63.3		259	24.3
40	13	21,947	-60.9		274	21.2
30	13	23,741	-58.9		267	24.1
25	11	24,890	-57.3			
20	6	26,282	-56.9			

1. January 1960
2. March 1960
3. June 1960
4. July 1960
5. August 1960
6. September 1960
7. October 1960
8. November 1960

Also see reference notes with current data.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun.

DELAYED DATA

Date	Sun's zenith distance								
	A M					P M			
	78.7°	75.7°	70.7°	60 0°	*	60.0°	70.7°	75.7°	78 7°
ALBUQUERQUE, N. MEX. †									
	Air mass								
	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
July 1960									
1- ---	(0.50)	(0.51)	----	---	1.14	(0.95)	----	----	----
2------	.47	.55	0.68	0.85	1.01	----	----	----	----
7------	----	----	----	----	----	(1.17)	----	----	----
9------	----	.88	1.02	1.19	----	----	----	----	----
10-----	.76	---	.96	1.13	1.13	----	----	----	----
11-----	.75	.86	.97	1.15	1.36	1.19	1.01	----	----
12-----	.83	.89	1.03	1.18	1.37	(1.16)	(1.01)	----	----
13-----	----	.93	1.03	1.15	1.36	----	----	----	----
14-----	.75	87	1.01	1.13	1.35	1.11	----	----	----
15-----	.81	.91	1.01	1.17	1.37	----	----	----	----
16-----	.75	.84	.94	1.13	1.31	1.16	.97	----	----
17-----	.76	.85	.92	1.13	1.36	----	----	----	----
18-----	.74	.86	.97	1.14	1.37	----	----	----	----
19-----	.86	.93	1.05	1.21	1.33	1.12	----	0.87	----
20-----	.82	.91	1.00	1.16	1.34	1.12	.92	.82	0.74
21-----	.68	.80	.94	1.13	1.35	1.15	.97	.85	.76
22-----	.77	.87	----	(1.14)	(1.29)	----	(.95)	(.85)	----
25-----	----	----	----	----	1.25	(1.11)	(.90)	----	(.71)
26-----	.75	.85	.97	1.13	1.32	----	----	----	----
27-----	.78	.90	1.01	1.17	1.32	----	----	----	----
28-----	.76	.83	.95	1.11	1.33	1.07	----	----	----
29-----	(.54)	(.65)	(.69)	(.72)	(1.25)	----	----	----	----
31-----	----	----	----	(1.06)	(1.24)	----	----	----	----
Averages	0.75	0.85	0.97	1.13	1.31	1.13	0.95	0.85	0.75

Date	Sun's zenith distance								
	A M.					P. M.			
	78.7°	75.7°	70.7°	60.0°	*	60 0°	70 7°	75 7°	78 7°
MAUNA LOA OBS., HAWAII									
	Air mass								
	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Nov. 1960									
1-----	1.24	1.32	1.37	1.52	----	----	----	----	----
4 ----	----	----	----	----	1.60	----	----	----	----
5-----	1.27	1.35	1.44	1.54	1.60	1.48	1.38	1.28	1.20
6-----	1.28	1.35	1.44	1.54	1.63	1.50	----	1.29	1.21
7-----	1.30	1.37	1.47	1.57	1.64	1.49	1.38	1.29	1.20
8-----	1.30	1.37	1.46	1.57	1.65	----	1.40	1.31	1.23
9-----	1.26	1.33	1.43	1.52	----	----	----	----	----
14----	1.27	1.36	1.46	1.56	1.67	----	----	----	----
16----	----	----	----	----	1.66	1.53	1.43	1.32	1.24
17----	1.30	1.37	1.46	1.57	1.66	1.55	1.44	1.35	1.27
18----	1.32	1.40	1.48	1.59	1.67	1.57	1.47	1.37	1.29
19----	----	----	----	----	1.62	----	----	1.31	1.24
20----	----	----	----	1.61	----	----	----	----	----
21----	1.32	1.40	1.48	1.59	----	----	----	----	----
24----	1.30	1.39	----	----	1.64	1.57	1.44	1.35	1.28
25----	----	----	----	----	----	1.54	1.42	1.32	1.26
26----	1.28	1.36	1.45	1.57	1.63	----	1.41	1.33	1.26
29----	1.25	1.32	1.43	1.55	1.65	----	----	----	----
30----	1.33	1.40	----	----	1.68	----	----	----	----
Averages	1.29	1.36	1.45	1.56	1.64	1.53	1.42	1.32	1.24

See reference notes with current data.

† All data should be considered doubtful due to condensation and dirt film on inside of glass tube.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

DELAYED DATA

	Fairbanks, Alaska		Fairbanks, Alaska		Fairbanks, Alaska		East Lansing, Mich.	Fairbanks, Alaska		East Lansing, Mich.	Fairbanks, Alaska		East Lansing, Mich.	Fairbanks, Alaska		East Lansing, Mich.	Fairbanks, Alaska		East Lansing, Mich.	Fairbanks, Alaska		East Lansing, Mich.	Fairbanks, Alaska		East Lansing, Mich.	Fairbnaks, Alaska		East Lansing, Mich.	Fairbanks, Alaska		East Lansing, Mich.	Fairbanks, Alaska		East Lansing, Mich.	Fairbanks, Alaska
1958		Nov.		Dec.		1959 Jan.			Feb.			Mar.			Apr.			May			Jun.			Jul.			Aug.			Sep.			Oct.		
Oct. 1	75	5	39	3	7	1	29	4	5	259	20	5	195	172	2	425	330	7	703	557	4	749	454	2	722	350	6	617	407	3	590	144	1	409	57
Oct. 2	104	6	42	4	5	2	138	2	6	355	42	6	116	119	3	80	176	8	737	464	5	704	594	3	732	429	7	83	562	4	516	184	2	322	164
Oct. 3	---	7	24	5	15	3	59	2	7	279	17	7	348	207	4	463	377	9	660	330	6	671	494	4	670	472	8	307	375	5	559	299	3	259	69
Oct. 4	118	8	27	6	7	4	164	14	8	314	28	8	185	145	5	419	380	10	461	338	7	709	593	5	570	182	9	396	435	6	523	206	4	179	49
Oct. 5	113	9	57	7	---	5	227	17	9	79	21	9	265	214	6	608	389	11	477	504	8	666	525	6	682	212	10	497	507	7	514	276	5	72	72
Oct. 6	172	10	20	8	14	6	173	6	10	48	28	10	492	232	7	282	119	12	617	621	9	651	506	7	717	415	11	513	493	8	519	234	6	78	134
Oct. 7	65	11	21	9	6	7	84	5	11	346	42	11	320	195	8	141	238	13	580	423	10	547	480	8	716	257	12	480	501	9	363	173	7	165	153
Average	108		33		9		125	7		240	28		274	184		345	287		605	463		671	521		687	331		413	469		512	217		212	100
Oct. 8	170	12	24	10	4	8	185	13	12	296	42	12	388	231	9	106	399	14	239	510	11	360	591	9	627	---	13	515	292	10	373	313	8	240	123
Oct. 9	175	13	56	11	6	9	237	6	13	137	40	13	389	227	10	129	318	15	356	197	12	732	652	10	668	134	14	562	482	11	316	---	9	258	156
Oct. 10	140	14	12	12	5	10	167	16	14	60	142	14	243	242	11	550	299	16	474	622	13	640	615	11	615	130	15	370	457	12	546	319	10	358	155
Oct. 11	163	15	21	13	3	11	73	12	15	250	152	15	106	260	12	565	161	17	456	---	14	767	697	12	670	376	16	230	321	13	497	175	11	213	147
Oct. 12	151	16	7	14	3	12	161	13	16	112	120	16	457	---	13	499	340	18	652	269	15	538	681	13	619	381	17	216	348	14	508	244	12	71	36
Oct. 13	---	17	9	15	3	13	210	13	17	191	---	17	476	266	14	647	466	19	350	127	16	734	379	14	620	292	18	594	246	15	116	282	13	77	67
Oct. 14	31	18	18	16	4	14	27	19	18	310	96	18	548	---	15	653	407	20	371	371	17	583	387	15	670	462	19	623	202	16	353	161	14	130	62
Average	138		21		4		151	13		194	99		373	245		450	341		414	349		622	572		641	296		444	336		387	249		192	106
Oct. 15	---	19	10	17	5	15	31	3	19	389	93	19	490	277	16	625	418	21	449	442	18	659	648	16	627	---	20	533	257	17	451	241	15	166	76
Oct. 16	46	20	10	18	5	16	112	14	20	386	80	20	291	295	17	461	412	22	269	492	19	700	---	17	393	537	21	431	364	18	526	105	16	314	68
Oct. 17	72	21	46	19	3	17	217	18	21	372	105	21	309	212	18	260	---	23	207	354	20	640	662	18	238	479	22	513	363	19	315	56	17	198	50
Oct. 18	41	22	41	20	3	18	199	6	22	359	144	22	553	219	19	312	---	24	760	145	21	721	658	19	608	628	23	516	283	20	328	163	18	365	148
Oct. 19	102	23	12	21	7	19	179	18	23	109	140	23	481	259	20	309	506	25	651	277	22	345	383	20	608	293	24	552	218	21	401	263	19	375	133
Oct. 20	53	24	17	22	3	20	131	24	24	439	114	24	466	296	21	698	512	26	366	481	23	575	396	21	670	370	25	539	367	22	281	---	20	356	---
Oct. 21	107	25	17	23	3	21	45	23	25	429	92	25	359	279	22	658	315	27	658	421	24	357	---	22	543	264	26	515	385	23	400	72	21	249	93
Average	70		22		4		131	15		355	110		421	263		474	433		480	373		571	549		527	428		514	319		386	150		289	95
Oct. 22	123	26	11	24	3	22	228	22	26	135	154	26	81	286	23	617	279	28	689	575	25	515	601	23	229	333	27	463	81	24	285	95	22	273	107
Oct. 23	123	27	8	25	13	23	220	25	27	339	70	27	531	307	24	125	---	29	446	692	26	489	---	24	566	---	28	505	109	25	301	65	23	90	72
Oct. 24	114	28	7	26	2	24	81	13	28	203	96	28	604	290	25	454	279	30	432	688	27	632	---	25	445	210	29	451	144	26	92	76	24	102	23
Oct. 25	118	29	6	27	2	25	125	15	Mar.1	422	208	29	299	285	26	378	243	31	445	699	28	583	237	26	678	141	30	434	---	27	452	217	25	45	95
Oct. 26	116	30	14	28	3	26	272	30	2	309	97	30	167	---	27	327	534	Jun.1	509	689	29	545	401	27	595	370	31	419	155	28	298	124	26	152	48
Oct. 27	35	Dec.1	9	29	---	27	296	28	3	286	119	31	260	---	28	82	530	2	657	547	30	604	518	28	552	583	Sep.1	363	83	29	336	35	27	81	49
Oct. 28	84	2	8	30	6	28	305	37	4	394	101	Apr.1	209	---	29	322	535	3	707	688	Jul.1	343	574	29	476	506	2	428	91	30	453	81	28	152	52
				31	11																														
Average	102		9				218	24		299	121		307	292		329	400		555	654		530	466		506	357		437	110		317	99		128	64
				Avg.	6																														
Oct. 29	37					29	104	51							30	317	506							30	431	195							29	168	53
Oct. 30	96					30	201	51							May 1	695	470							31	671	202							30	140	48
Oct. 31	---					31	308	7							2	611	559							Aug.1	720	449							31	50	88
Nov. 1	57					Feb.1	319	18							3	526	518							2	727	364							Nov.1	198	31
Nov. 2	15					2	295	12							4	557	348							3	216	269							2	208	---
Nov. 3	44					3	77	19							5	622	380							4	435	443							3	118	---
Nov. 4	52					4	216	73							6	508	452							5	643	402							4	22	31
Average	50						217	33								548	462								549	332								129	50

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

DELAYED DATA

	East Lansing, Mich.	Fairbanks, Alaska	Phoenix, Ariz.		East Lansing, Mich.	Fairbanks, Alaska	Phoenix, Ariz.		East Lansing, Mich.	Fairbanks, Alaska	Phoenix, Ariz.	Seattle, Wash.		East Lansing, Mich.	Fairbanks, Alaska	Phoenix, Ariz.	Seattle, Wash.		East Lansing, Mich.	Fairbanks, Alaska	Phoenix, Ariz.	Seattle, Wash.		East Lansing, Mich.	Fairbanks, Alaska	Phoenix, Ariz.	Seattle, Wash.	Stillwater, Okla.		East Lansing, Mich.	Fairbanks, Alaska	Phoenix, Ariz.	Seattle, Wash.	Stillwater, Okla.
1959				Dec.				1960 Jan.					Feb.					Mar.					Apr.						May					
Nov. 5	158	28	440	3	203	4	320	1	180	4	187	133	5	99	31	395	200	4	380	117	441	288	1	215	373	619	253	423	6	330	568	722	122	---
Nov. 6	89	38	440	4	134	2	322	2	33	2	322	55	6	86	52	417	25	5	490	120	524	96	2	253	384	653	399	602	7	149	---	726	526	675
Nov. 7	157	18	425	5	24	5	347	3	75	4	331	149	7	220	34	389	220	6	366	199	485	96	3	295	215	654	459	603	8	256	575	738	644	659
Nov. 8	99	22	421	6	81	5	333	4	90	3	321	37	8	122	54	388	56	7	461	191	504	335	4	124	369	649	456	594	9	94	317	725	637	625
Nov. 9	180	18	373	7	94	3	216	5	167	3	327	13	9	149	---	---	99	8	505	201	520	178	5	198	369	658	351	584	10	182	240	718	271	674
Nov. 10	186	56	452	8	217	3	288	6	91	5	336	26	10	22	68	140	70	9	300	205	475	126	6	106	339	557	510	498	11	91	603	728	280	552
Nov. 11	53	69	358	9	196	4	165	7	74	3	334	16	11	122	62	413	94	10	511	215	526	104	7	312	231	591	490	---	12	123	378	734	529	679
Average	132	36	416		136	4	284		102	3	308	61		117	50	357	109		430	178	497	175		215	326	626	417	551		175	447	727	430	644
Nov. 12	109	18	403	10	192	8	48	8	99	2	330	24	12	167	---	435	28	11	468	222	530	378	8	286	248	645	247	163	13	184	585	689	423	673
Nov. 13	33	31	220	11	7	2	299	9	72	3	298	74	13	325	52	248	177	12	555	162	479	238	9	154	355	655	390	530	14	555	598	544	466	322
Nov. 14	112	20	379	12	7	3	241	10	35	3	100	31	14	368	88	445	58	13	471	230	470	128	10	635	432	589	517	565	15	642	620	747	(593)	143
Nov. 15	277	20	261	13	191	2	283	11	140	---	55	43	15	154	37	440	153	14	428	195	560	142	11	139	431	320	358	378	16	492	631	760	376	592
Nov. 16	52	9	391	14	104	1	172	12	16	13	163	57	16	233	123	444	136	15	537	238	549	260	12	611	413	647	---	186	17	124	644	721	211	461
Nov. 17	149	11	413	15	84	2	313	13	26	13	124	53	17	131	81	472	26	16	130	130	583	64	13	423	288	665	140	15	18	675	643	759	473	415
Nov. 18	85	11	290	16	167	7	313	14	24	11	347	45	18	239	80	441	185	17	261	140	589	119	14	131	251	641	294	522	19	419	641	739	128	556
Average	117	17	337		107	4	238		59	7	202	47		231	77	418	109		407	188	537	190		340	346	595	324	337		442	623	708	(381)	452
Nov. 19	165	27	295	17	135	2	308	15	138	38	141	25	19	242	98	389	192	18	457	155	582	281	15	98	441	537	316	515	20	447	639	786	208	482
Nov. 20	89	13	353	18	116	2	305	16	70	6	279	17	20	287	116	450	97	19	539	317	587	357	16	244	289	679	514	336	21	487	603	778	539	700
Nov. 21	69	22	333	19	178	4	225	17	154	26	371	169	21	157	55	---	161	20	449	285	588	356	17	177	293	677	218	613	22	339	450	777	593	671
Nov. 22	213	25	357	20	126	1	134	18	59	14	358	189	22	222	29	472	204	21	450	---	585	147	18	533	387	640	404	601	23	176	497	767	432	554
Nov. 23	73	9	334	21	49	2	164	19	160	13	366	54	23	364	---	323	282	22	435	308	496	340	19	637	343	676	606	589	24	719	600	785	256	481
Nov. 24	18	16	343	22	155	2	258	20	199	8	371	140	24	394	---	495	60	23	327	232	251	322	20	522	464	674	603	480	25	711	627	787	255	636
Nov. 25	68	11	337	23	76	2	112	21	199	15	327	61	25	160	106	465	277	24	376	308	564	262	21	345	355	604	511	606	26	395	675	779	431	---
Average	99	18	336		119	2	215		140	17	316	94		261	81	432	182		433	267	522	295		365	367	641	453	534		468	584	780	388	587
Nov. 26	71	6	351	24	25	7	26	22	135	18	335	71	26	315	116	308	127	25	526	295	572	418	22	611	303	669	447	426	27	300	472	757	414	551
Nov. 27	193	9	357	25	54	2	94	23	130	39	350	32	27	262	84	234	313	26	506	255	581	223	23	499	359	464	300	228	28	398	490	739	662	573
Nov. 28	116	13	355	26	35	10	329	24	206	41	366	30	28	235	91	414	358	27	379	340	488	359	24	497	419	729	267	376	29	602	533	759	466	633
Nov. 29	98	5	343	27	47	4	325	25	114	43	353	36	29	335	173	379	341	28	195	345	520	211	25	254	241	737	495	507	30	389	388	675	211	482
Nov. 30	118	16	327	28	17	4	259	26	184	17	345	74	Mar. 1	377	177	279	340	29	316	353	603	116	26	136	255	606	482	642	31	636	340	755	386	---
Dec. 1	174	2	338	29	78	3	262	27	101	55	215	90	2	400	180	500	295	30	237	354	610	247	27	669	488	627	250	161	Jun. 1	501	576	617	524	---
Dec. 2	134	11	340	30	87	3	151	28	98	44	386	---	3	255	---	502	75	31	67	365	622	157	28	615	501	688	190	292	2	513	---	670	691	---
				31	189	2	108																											
Average	129	9	344						138	37	335	55		311	137	374	264		318	330	571	248		469	367	646	347	376		477	467	710	479	560
				Avg.	66	4	194																											
								29	143	17	398	---											29	244	448	738	349	475						
								30	128	34	286	145											30	87	535	729	472	667						
								31	215	14	387	133											May 1	521	469	735	502	658						
								Feb. 1	161	36	352	23											2	598	538	682	124	670						
								2	314	22	409	56											3	639	557	600	266	630						
								3	289	47	403	106											4	616	441	444	121	136						
								4	277	35	413	65											5	507	561	704	524	420						
								Avg.	218	29	378	88												459	507	662	337	522						

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

DELAYED DATA

1960	East Lansing, Mich.	Fairbanks, Alaska	Lemont, Ill.	Matanuska, Alaska	Phoenix, Ariz.	Salt Lake City, Utah	Sayville, N. Y.	Seattle, Wash.	Stillwater, Okla.	Tucson, Ariz.
Jun. 3------	734	448	746	704	701	797	351	246	709	659
Jun. 4------	645	503	538	658	737	814	205	663	288	746
Jun. 5------	588	---	544	582	682	678	600	631	---	404
Jun. 6------	600	658	661	716	435	602	632	410	---	---
Jun. 7------	627	693	775	618	704	652	671	703	297	---
Jun. 8------	776	643	751	---	749	647	759	738	396	624
Jun. 9------	773	650	739	---	751	689	532	736	615	640
Average--------	677	599	679	656	680	697	536	555	461	615
Jun. 10------	681	607	547	---	721	805	645	551	---	735
Jun. 11------	542	447	466	348	758	773	689	545	---	787
Jun. 12------	368	233	150	540	768	749	115	746	---	---
Jun. 13------	87	378	251	402	771	768	555	496	---	---
Jun. 14------	88	145	113	---	751	726	179	117	704	701
Jun. 15------	500	494	467	---	744	565	119	164	---	---
Jun. 16------	368	---	261	552	741	789	673	360	534	769
Average--------	376	384	322	461	750	739	425	425	---	748
Jun. 17------	194	445	581	385	730	521	314	225	717	754
Jun. 18------	408	536	418	645	723	750	499	317	---	682
Jun. 19------	780	709	749	410	737	640	669	471	---	616
Jun. 20------	626	710	436	722	752	807	664	303	---	750
Jun. 21------	707	659	208	716	718	830	649	549	647	753
Jun. 22------	333	543	493	719	537	828	293	745	533	321
Jun. 23------	337	521	309	613	606	631	415	737	---	737
Average--------	484	589	456	601	686	715	500	478	---	659
Jun. 24------	285	422	686	327	754	812	238	115	---	764
Jun. 25------	789	411	741	252	771	806	681	431	---	795
Jun. 26------	707	554	700	336	781	759	713	554	---	785
Jun. 27------	730	630	401	585	770	745	703	729	588	766
Jun. 28------	365	235	533	299	751	812	704	738	---	744
Jun. 29------	645	316	644	331	752	806	277	319	---	752
Jun. 30------	512	556	331	248	737	792	520	157	---	757
Jul. 1------	678	313	655	316	717	700	198	266	---	708
Average--------	589	430	586	337	754	779	504	414	---	759

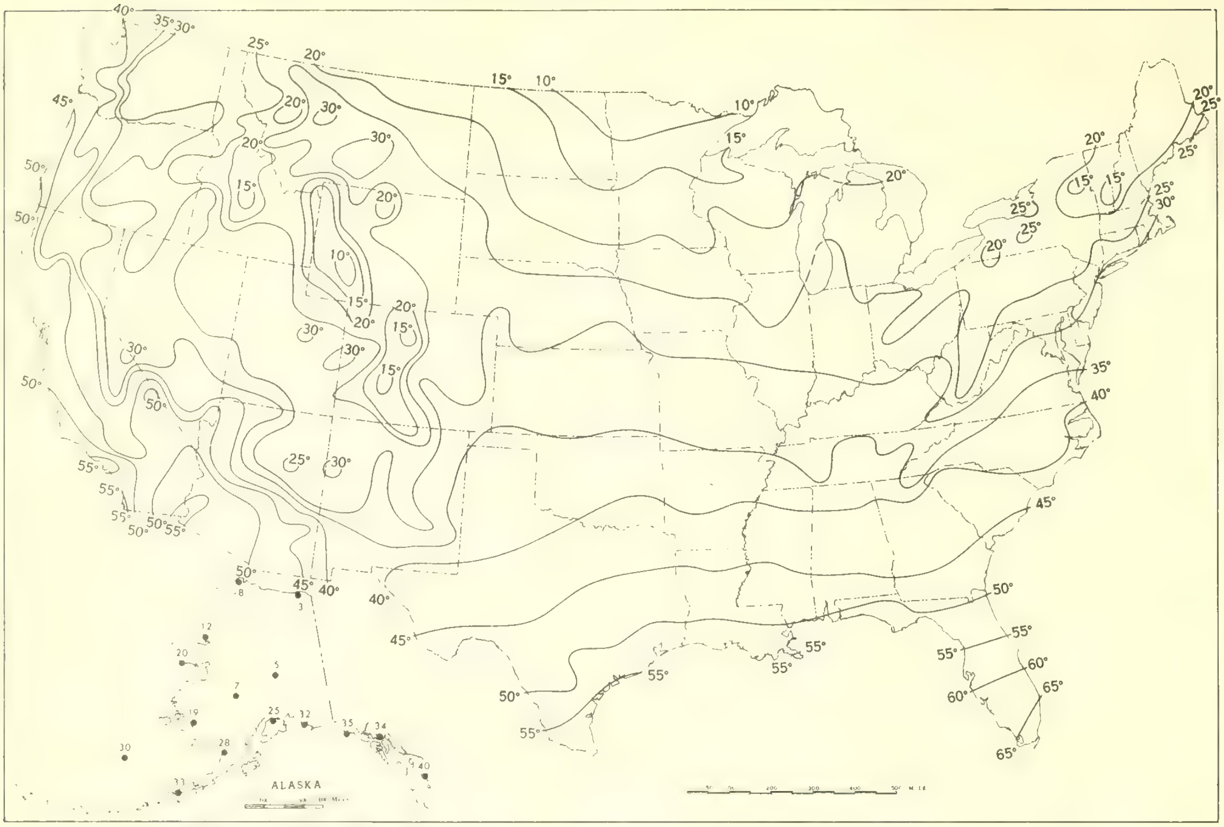
Jul.	Blue Hill Obs., Mass.	Boston, Mass.	East Lansing, Mich.	Fairbanks, Alaska	Lemont, Ill.	Phoenix, Ariz.	Salt Lake City, Utah	Sayville, N. Y.	Seattle, Wash.	Stillwater, Okla.
2	483	541	638	430	614	629	651	570	717	730
3	529	566	514	594	556	601	777	475	716	597
4	708	720	586	441	717	578	565	724	733	---
5	621	618	649	268	705	690	697	587	698	---
6	611	590	674	392	458	625	496	613	719	---
7	591	495	658	339	730	690	647	574	381	---
8	624	654	631	620	674	383	770	654	449	---
	595	602	621	441	636	599	658	600	630	---
9	623	636	588	590	442	629	551	648	423	606
10	675	667	382	678	194	629	730	518	397	572
11	545	556	689	675	342	709	795	609	449	713
12	640	619	567	601	511	704	774	607	460	---
13	465	459	314	648	649	697	668	534	418	445
14	27	---	716	511	744	684	773	45	691	---
15	711	735	711	462	617	684	779	679	692	---
	527	612	567	595	500	677	724	520	504	584
16	726	728	562	419	669	671	774	673	705	---
17	602	624	304	608	628	653	741	650	689	---
18	297	399	393	578	483	595	714	627	693	---
19	361	355	(590)	543	692	671	775	402	704	---
20	481	504	687	604	628	682	704	559	654	---
21	691	700	628	604	675	670	643	693	692	---
22	614	647	603	238	636	653	577	531	361	---
	539	565	(538)	514	630	656	704	591	643	---
23	341	372	707	396	607	616	571	425	702	---
24	670	691	727	477	627	660	717	656	706	---
25	674	672	636	321	495	632	732	650	693	---
26	602	537	200	243	476	588	694	672	508	---
27	288	226	625	363	688	647	676	110	670	---
28	571	620	609	416	600	650	690	552	662	686
29	518	536	690	379	658	643	708	390	565	681
Avg.	523	522	599	371	593	634	634	494	644	---
30	91	74	499	304	482	492	560	265	375	638
31	663	681	558	473	703	654	---	571	447	733
Aug.1	675	684	674	277	668	654	---	607	---	680
2	472	495	239	335	502	658	721	256	266	680
3	247	225	77	408	370	627	737	377	281	678
4	568	603	319	352	141	474	721	140	282	619
5	207	247	654	---	606	574	723	83	549	677
Avg.	418	430	431	358	496	591	692	328	367	672

Aug.	East Lansing, Mich.	Fairbanks, Alaska	Lemont, Ill.	Phoenix, Ariz.	Pullman, Wash.	Seattle, Wash.
6	501	234	459	579	660	656
7	351	329	535	538	603	638
8	486	410	623	621	699	625
9	234	---	437	619	677	629
10	204	506	399	635	641	440
11	564	590	542	604	660	191
12	570	---	590	629	698	487
	416	396	512	604	663	524
13	516	279	605	596	665	153
14	311	126	258	578	545	371
15	572	232	535	616	293	270
16	589	280	528	643	552	96
17	(537)	234	616	644	674	358
18	509	297	547	655	644	371
19	494	266	332	630	569	290
	(504)	245	489	623	563	273
20	381	204	303	629	649	462
21	242	355	580	276	340	193
22	478	381	467	290	---	372
23	527	335	419	628	238	121
24	597	155	457	629	337	165
25	591	378	541	644	340	200
26	456	360	406	615	383	238
	468	310	453	530	381	250
27	596	91	477	638	471	391
28	409	101	453	632	496	236
29	277	315	337	612	219	142
30	449	159	490	601	495	277
31	485	230	541	550	---	298
Sep.1	417	312	529	514	578	204
2	518	149	447	583	574	477
	450	194	468	590	472	289

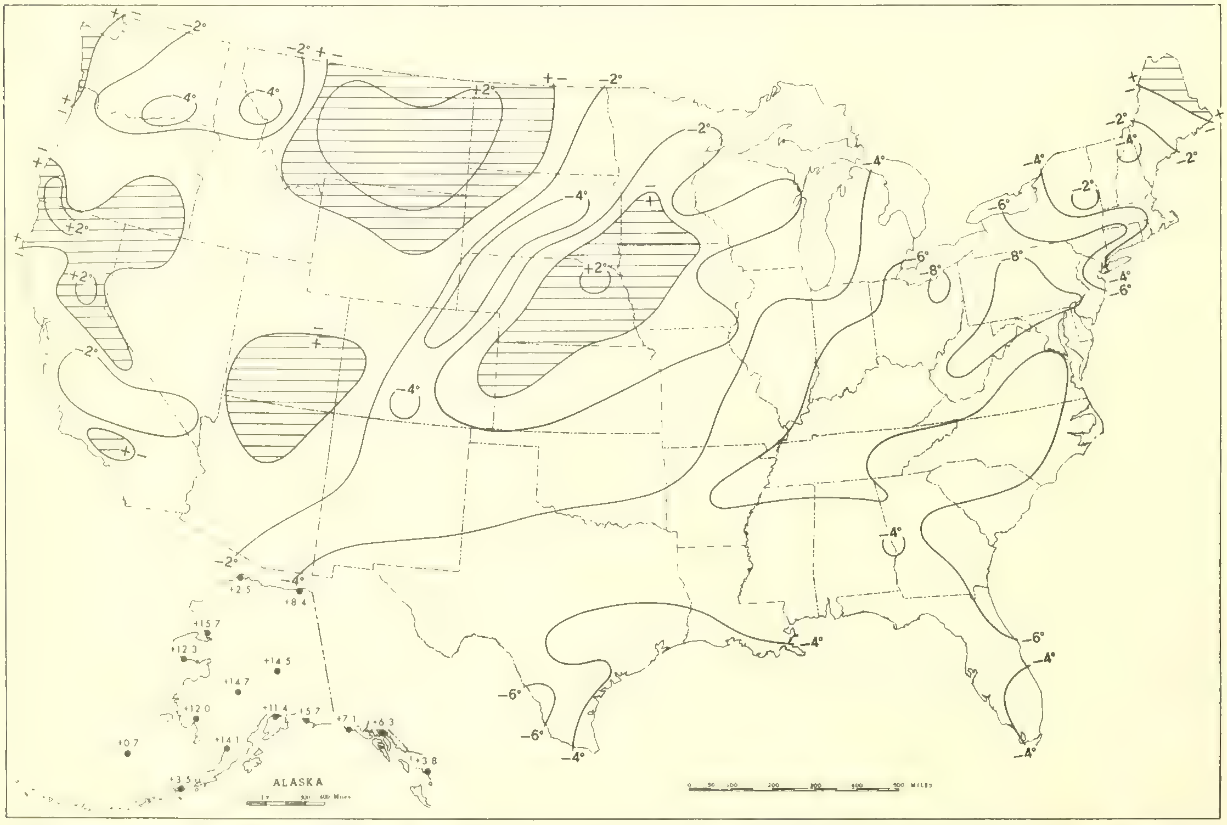
Sep.	Seattle, Wash.	Oct.	Seattle, Wash.	Nov.	Seattle, Wash.
3	441	1	363	5	224
4	150	2	327	6	215
5	238	3	158	7	64
6	564	4	353	8	99
7	528	5	307	9	138
8	542	6	182	10	12
9	521	7	133	11	168
	426		261		132
10	289	8	310	12	166
11	462	9	337	13	121
12	189	10	341	14	108
13	267	11	73	15	10
14	238	12	296	16	94
15	186	13	227	17	19
16	166	14	188	18	54
	257		253		82
17	119	15	209	19	28
18	306	16	79	20	7
19	92	17	285	21	31
20	330	18	178	22	28
21	413	19	20	23	18
22	106	20	92	24	9
23	190	21	31	25	89
	222		128		30
24	52	22	157	26	163
25	159	23	27	27	138
26	325	24	156	28	91
27	389	25	77	29	97
28	402	26	128	30	19
29	384	27	33	Dec.1	73
30	341	28	107	2	59
	293		98		91
		29	182		
		30	51		
		31	42		
		Nov.1	133		
		2	79		
		3	187		
		4	224		
			128		

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

Chart I. A. Average Temperature (°F.) at Surface, December 1960.



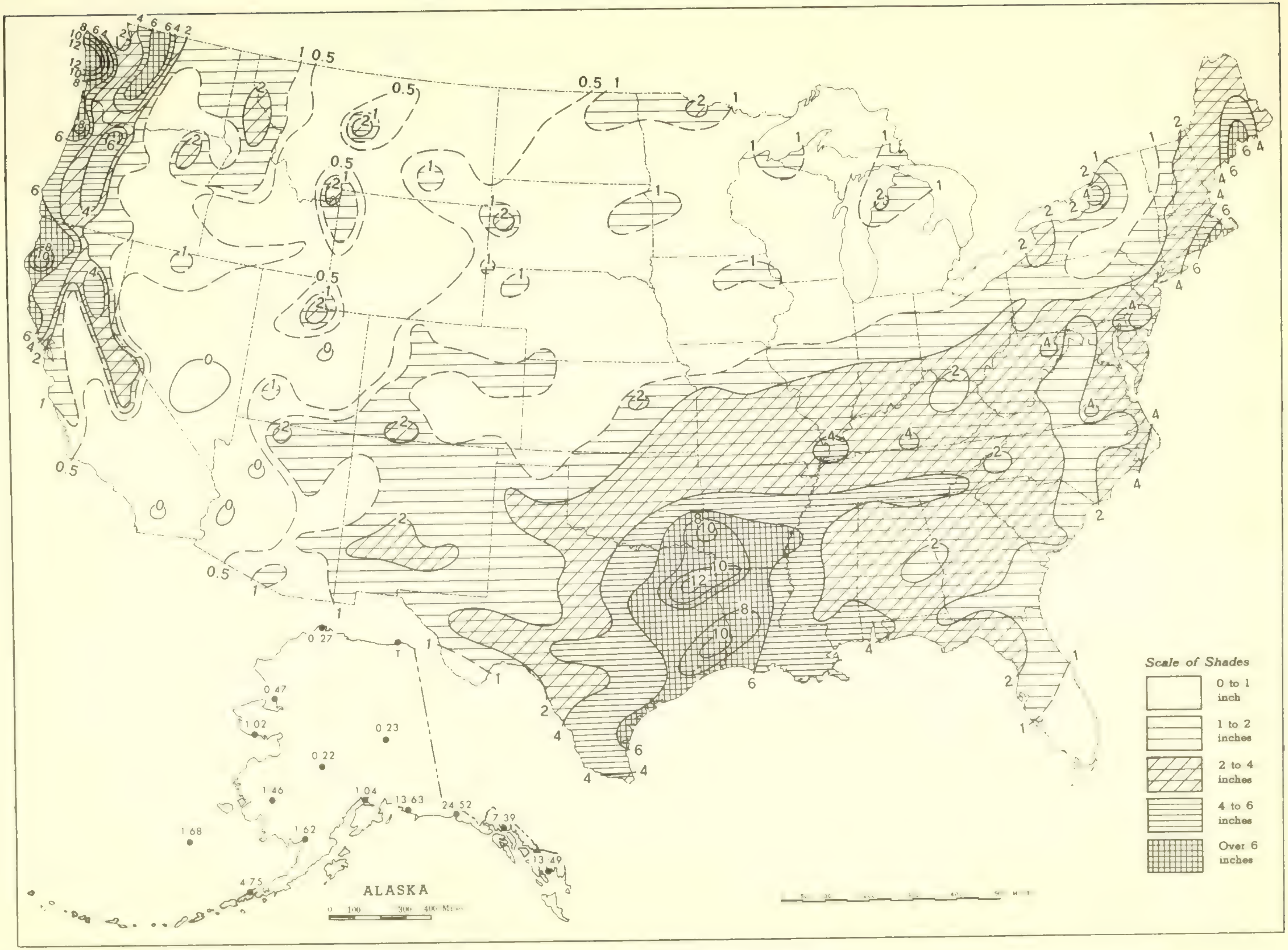
B. Departure of Average Temperature from Normal (°F.), December 1960.



A. Based on reports from over 900 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

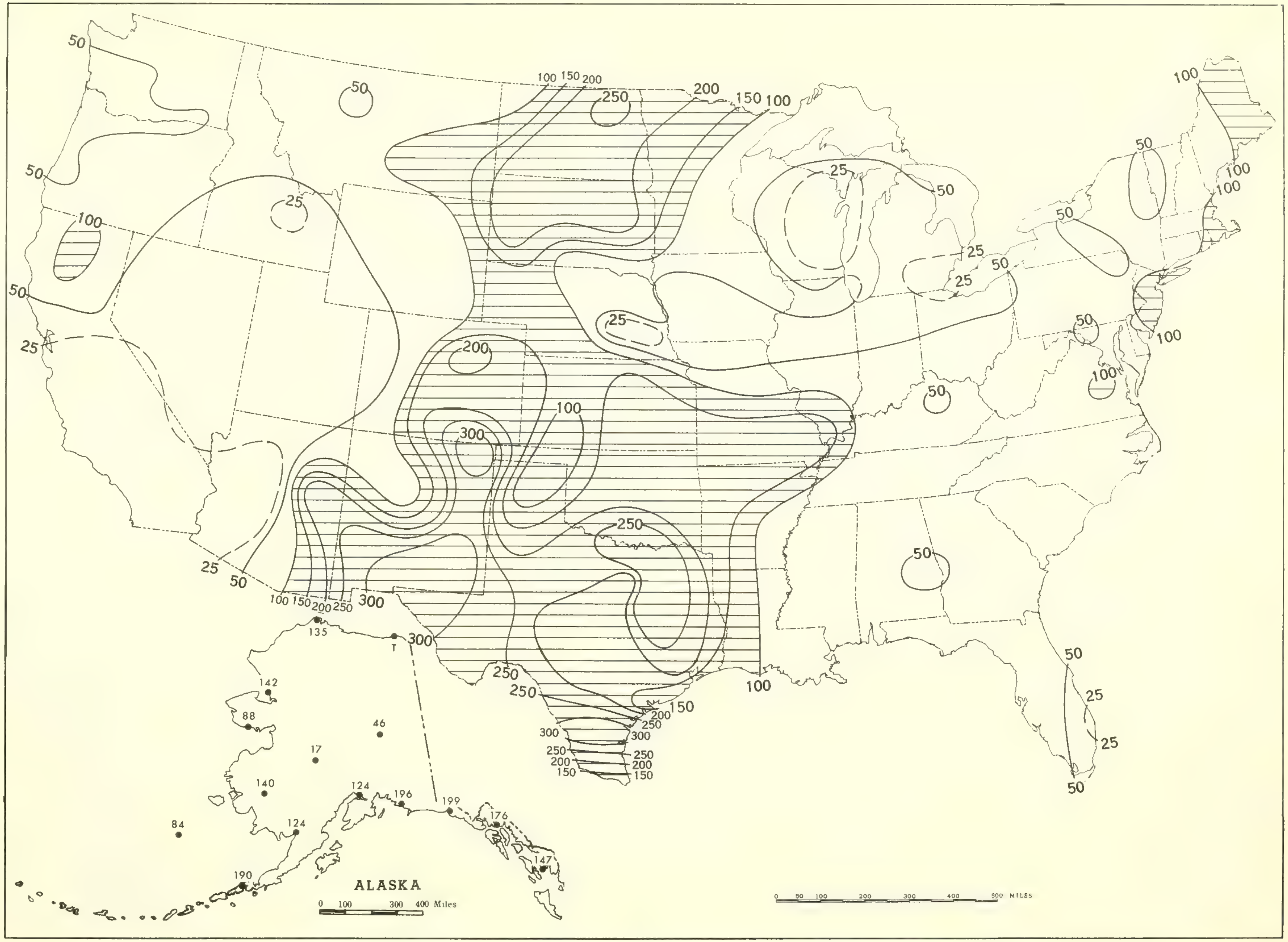
B. Departures from normal are based on the 30-yr. normals (1921-50) for Weather Bureau stations and on means of 25 years or more (mostly 1931-55) for cooperative stations.

Chart II. Total Precipitation (Inches), December 1960.



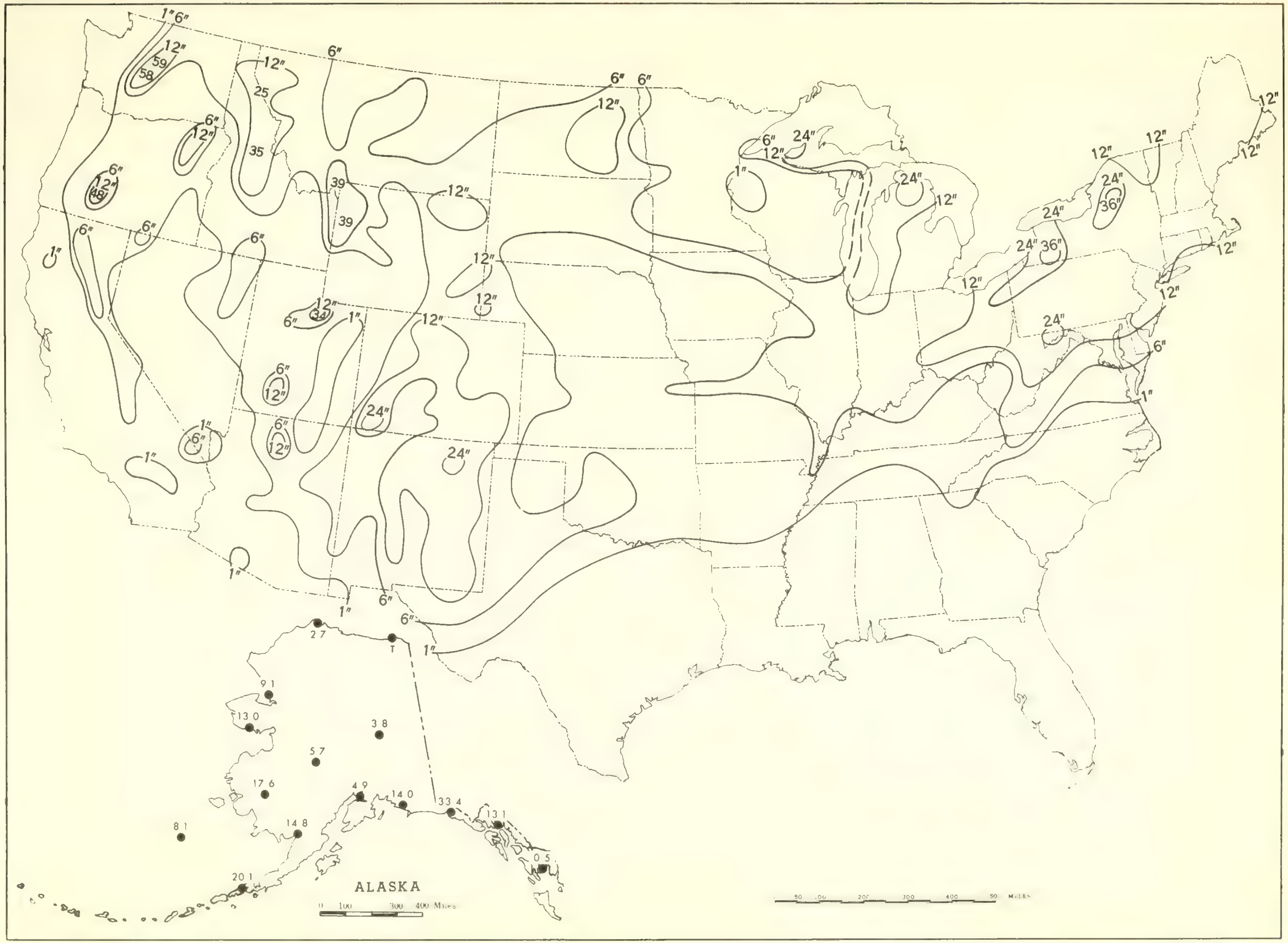
Based on daily precipitation records at about 800 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, December 1960.



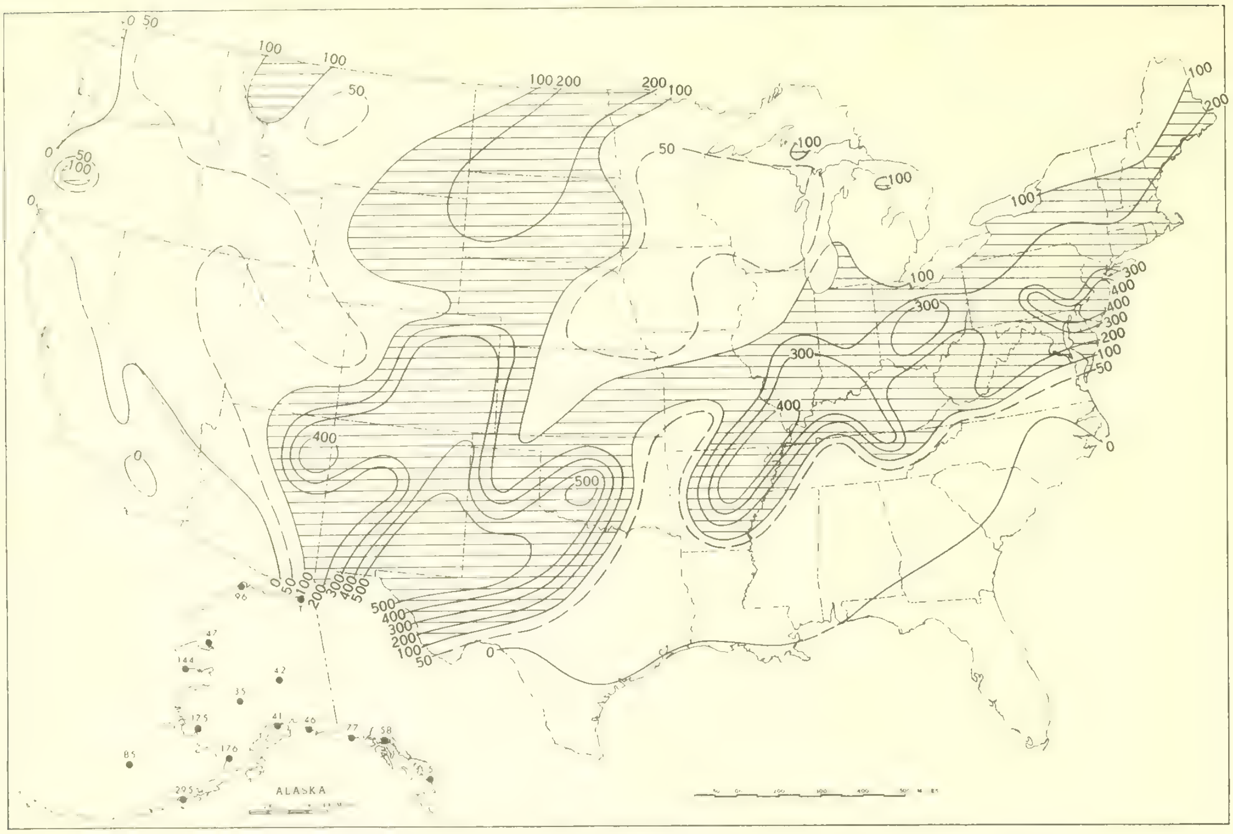
Normal monthly precipitation amounts are computed from the records for 1921-50 for Weather Bureau stations and from records of 25 years or more (mostly 1931-55) for cooperative stations.

Chart IV. Total Snowfall (Inches), December 1960.

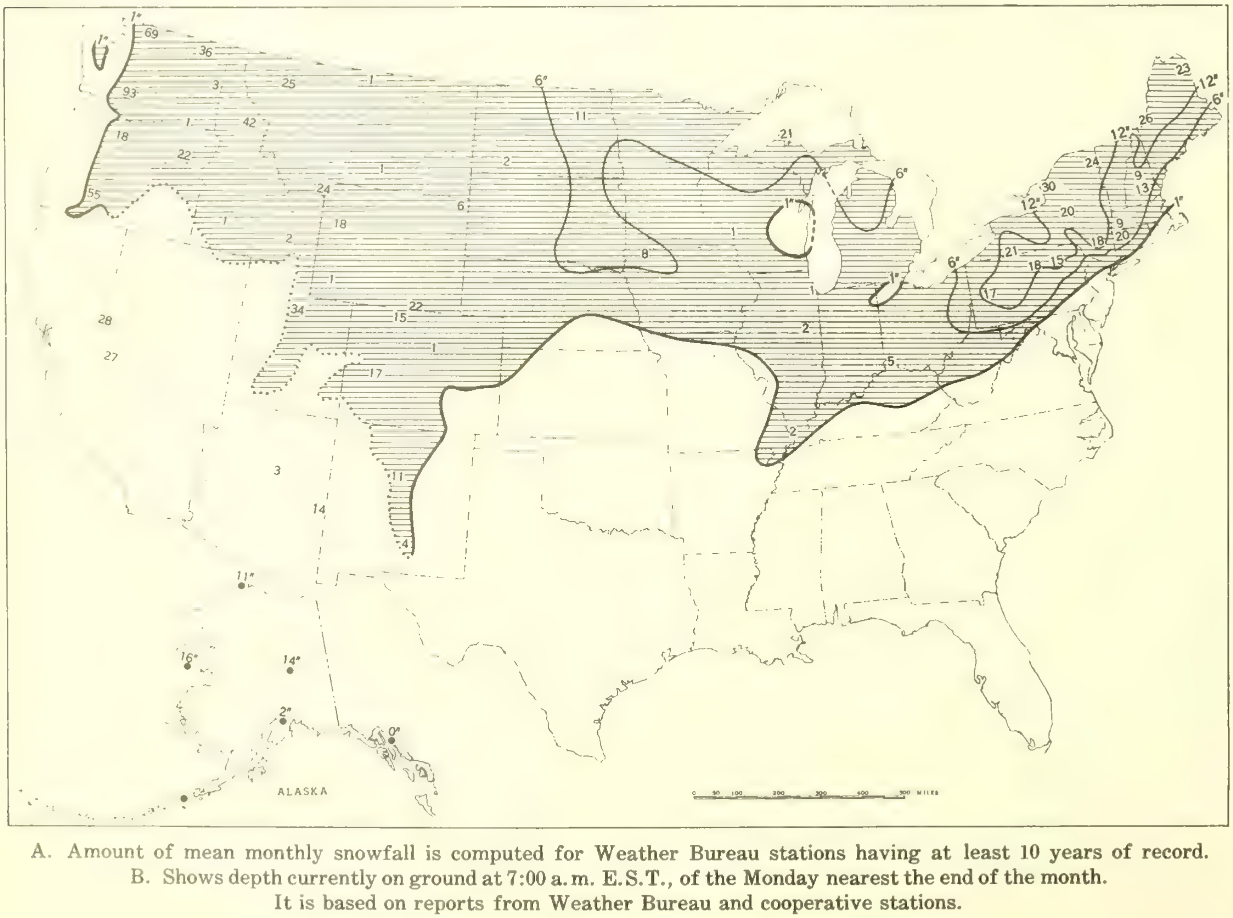


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, December 1960.

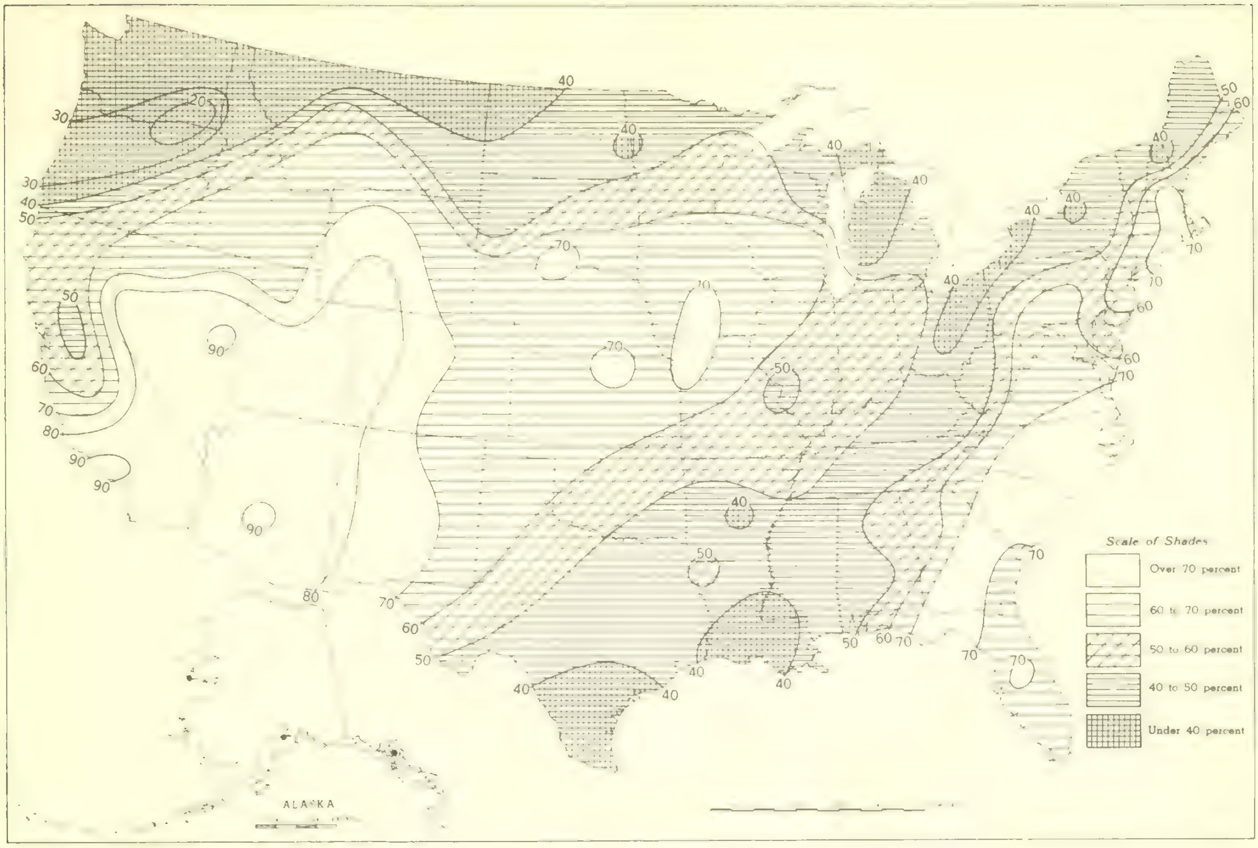


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., January 2, 1961.

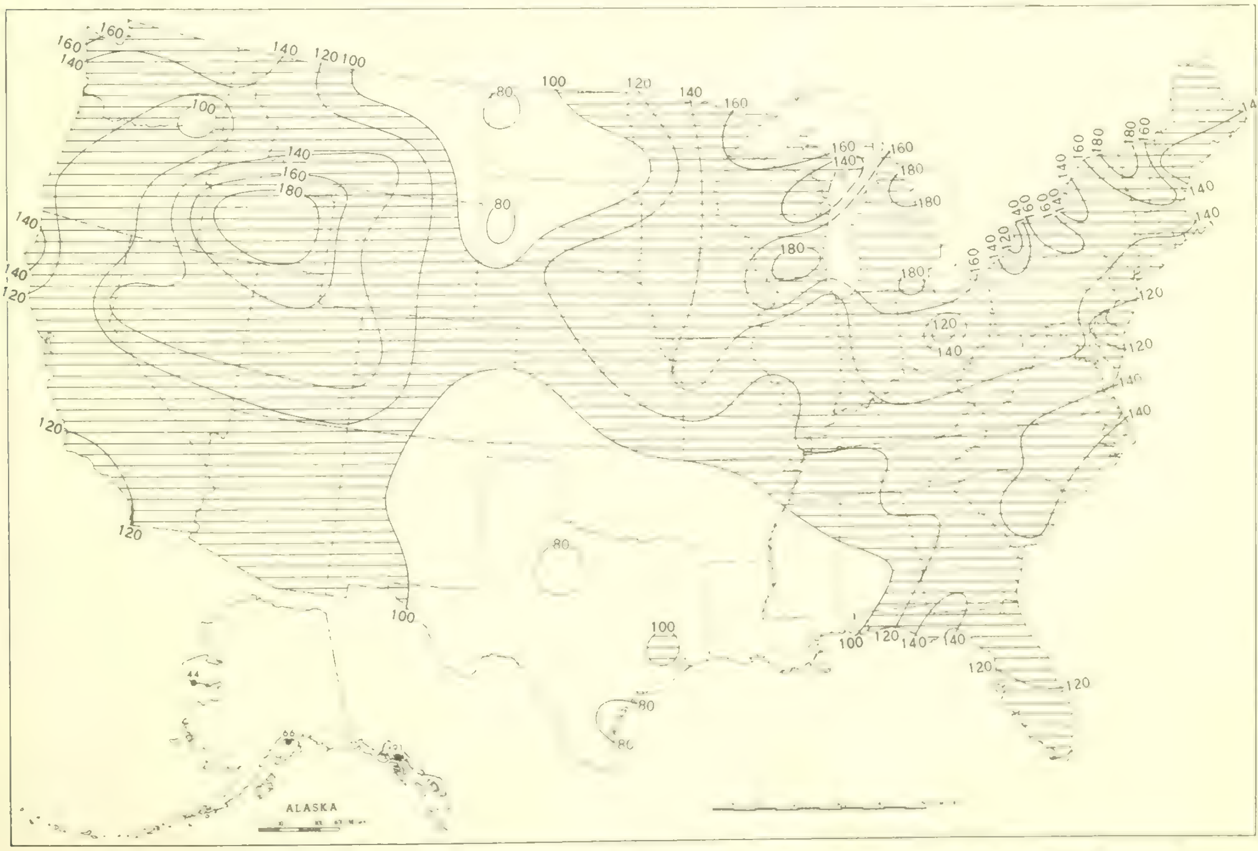


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a. m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VII. A. Percentage of Possible Sunshine, December 1960.

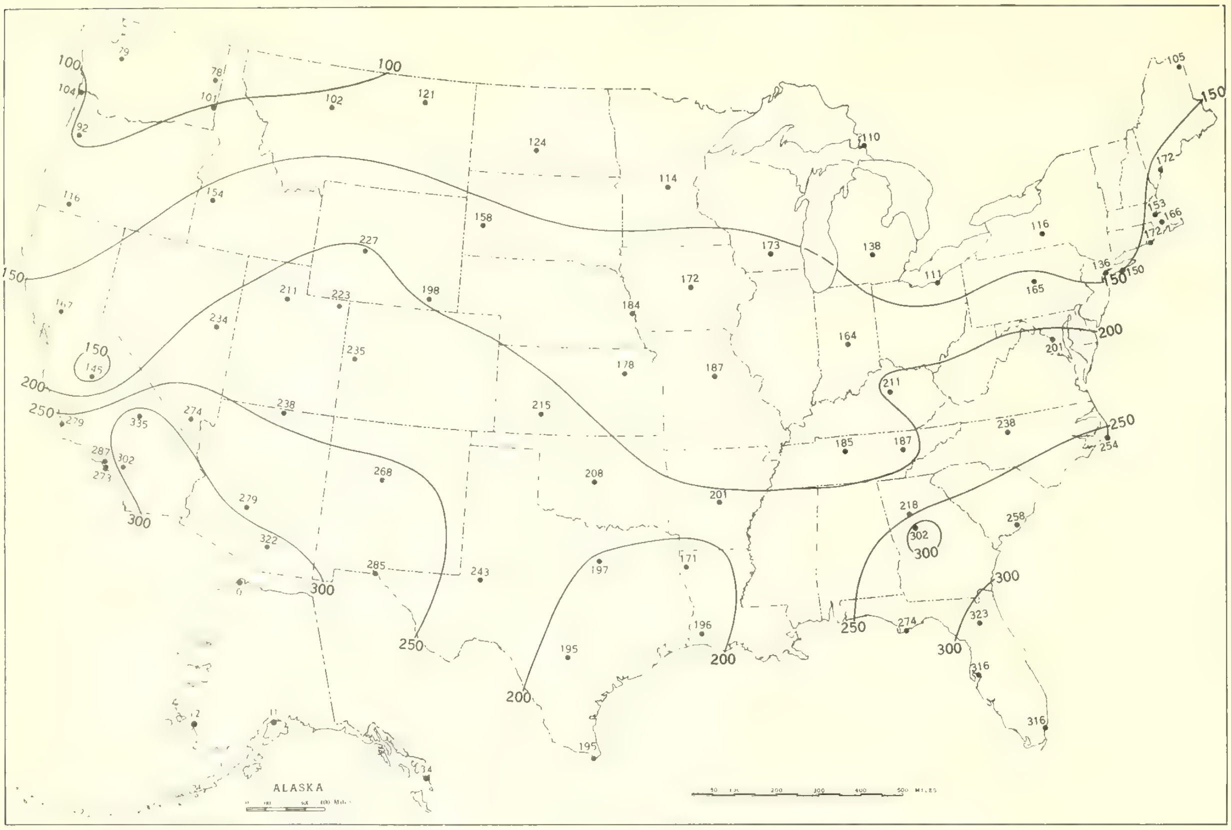


B. Percentage of Mean Monthly Sunshine, December 1960.

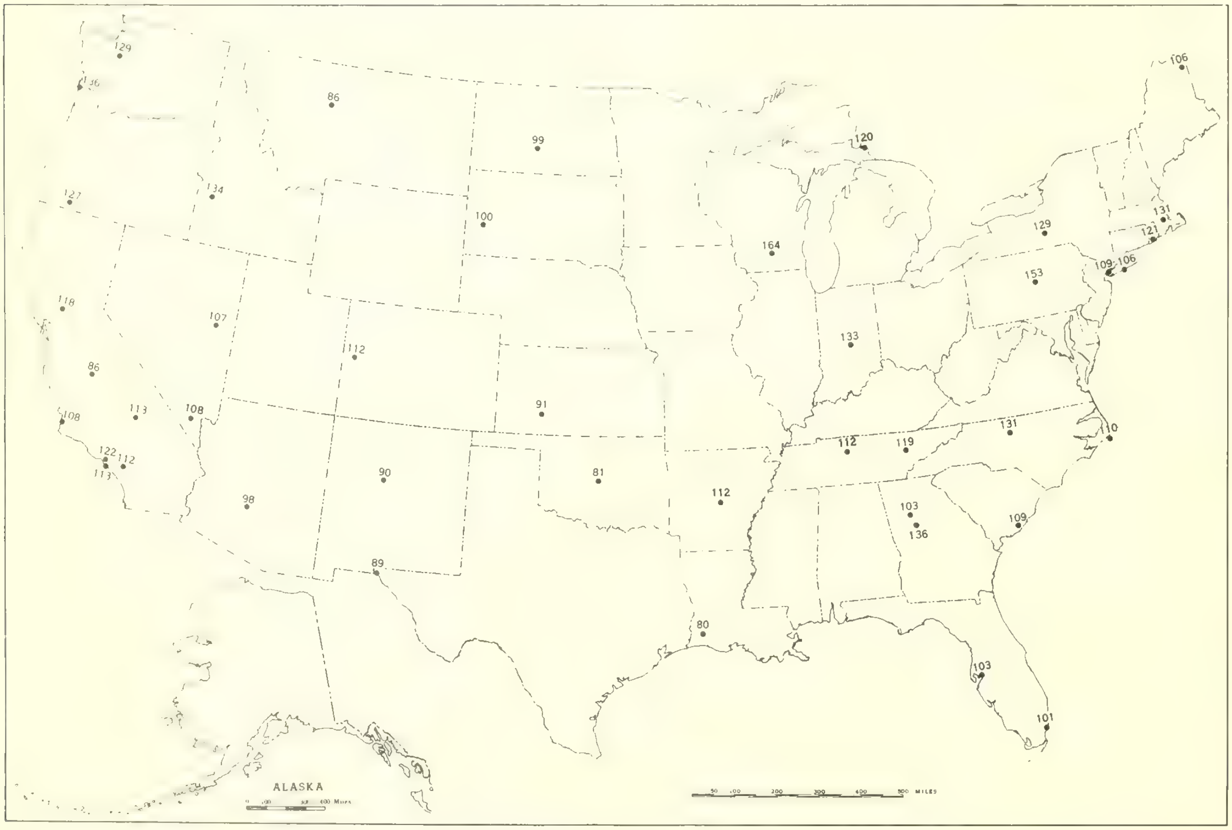


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VIII. A. Average Daily Values of Solar Radiation, Langleys, December 1960.



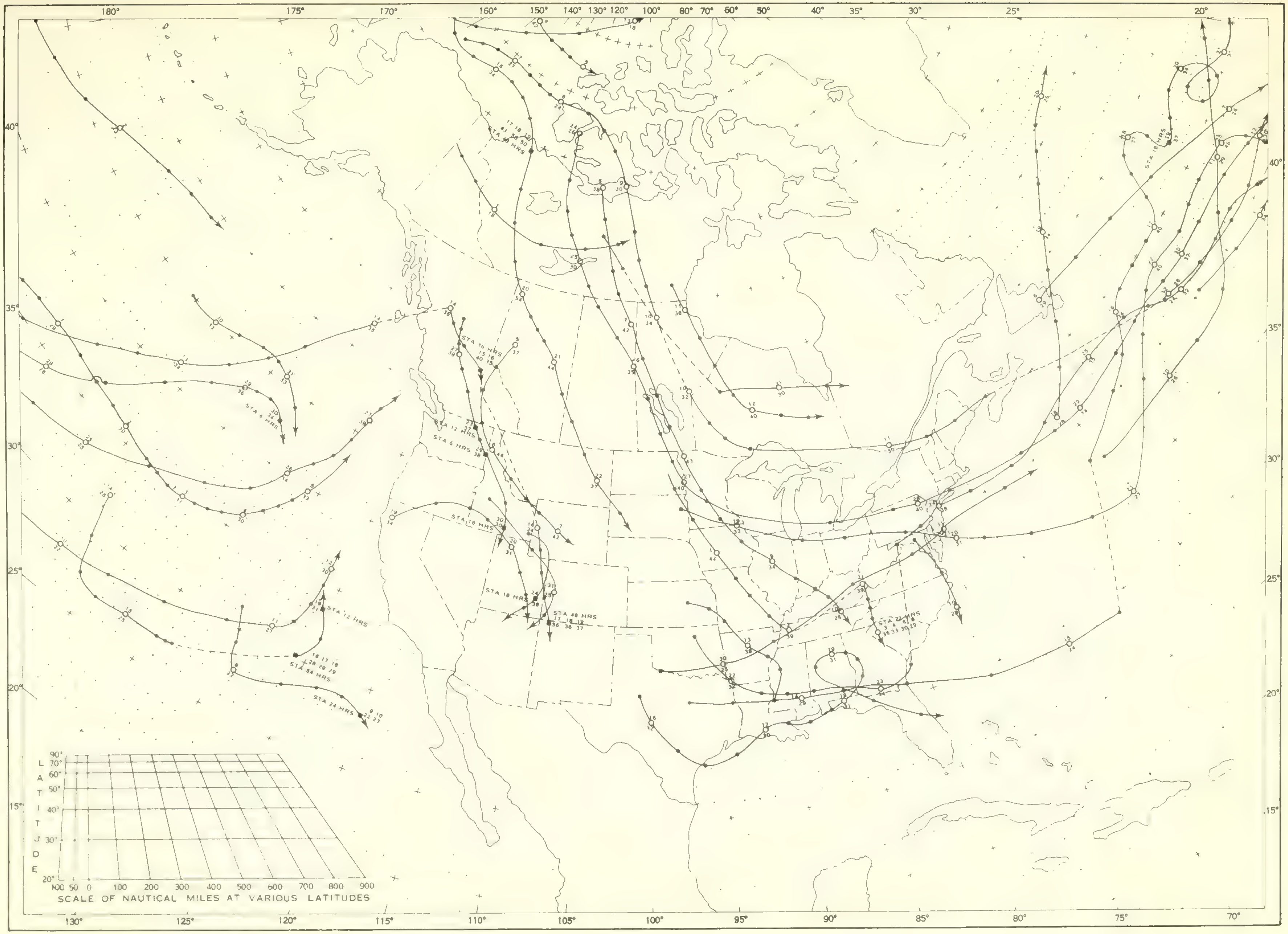
B. Percentage of Mean Daily Solar Radiation, December 1960.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. $^{-2}$) and recorded in International Pyrheliometer Scale of 1956.

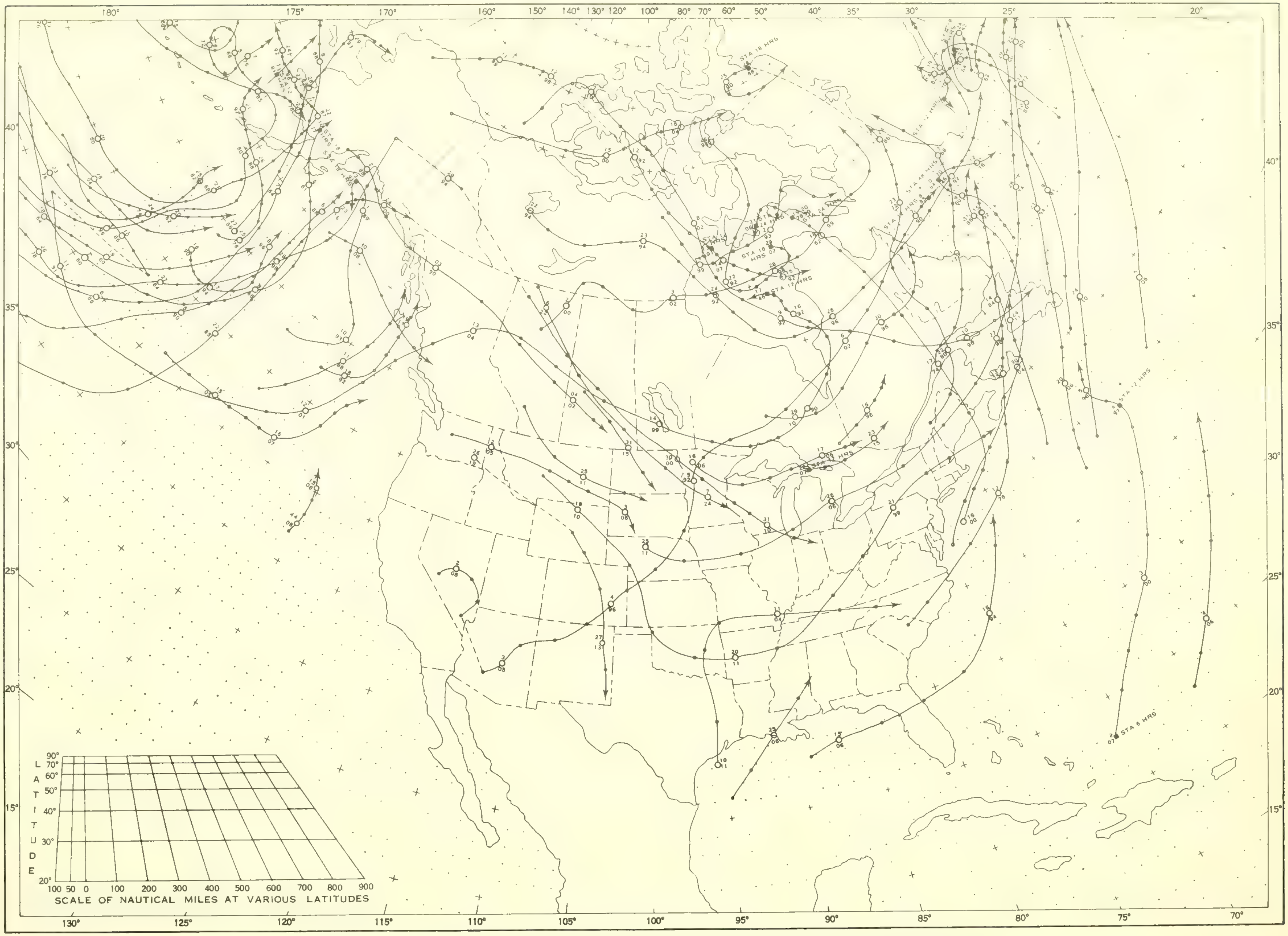
B. Percentage of the mean based on the period 1953-57, and corrected to the International Pyrheliometer Scale of 1956.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, December 1960.



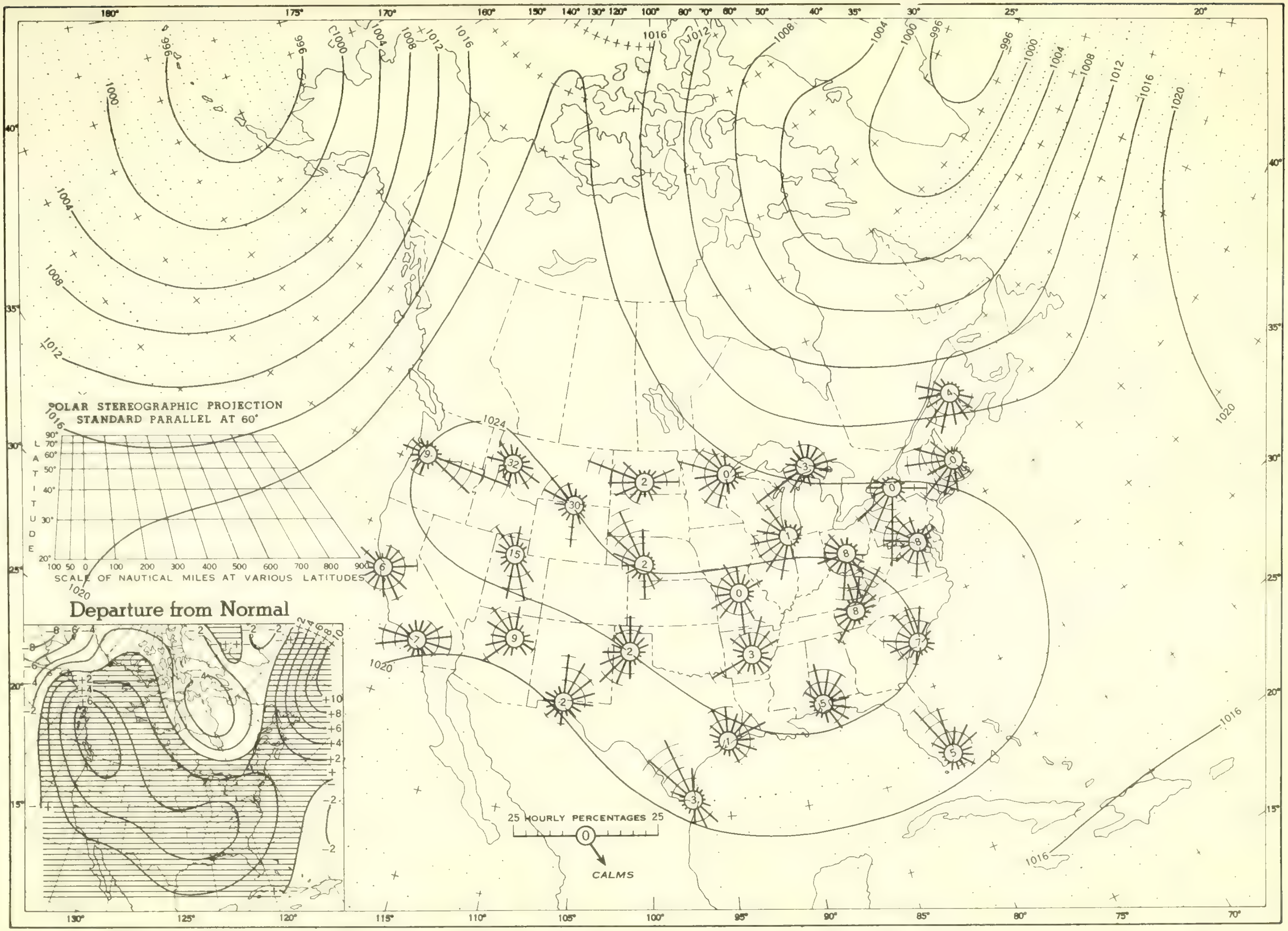
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, December 1960



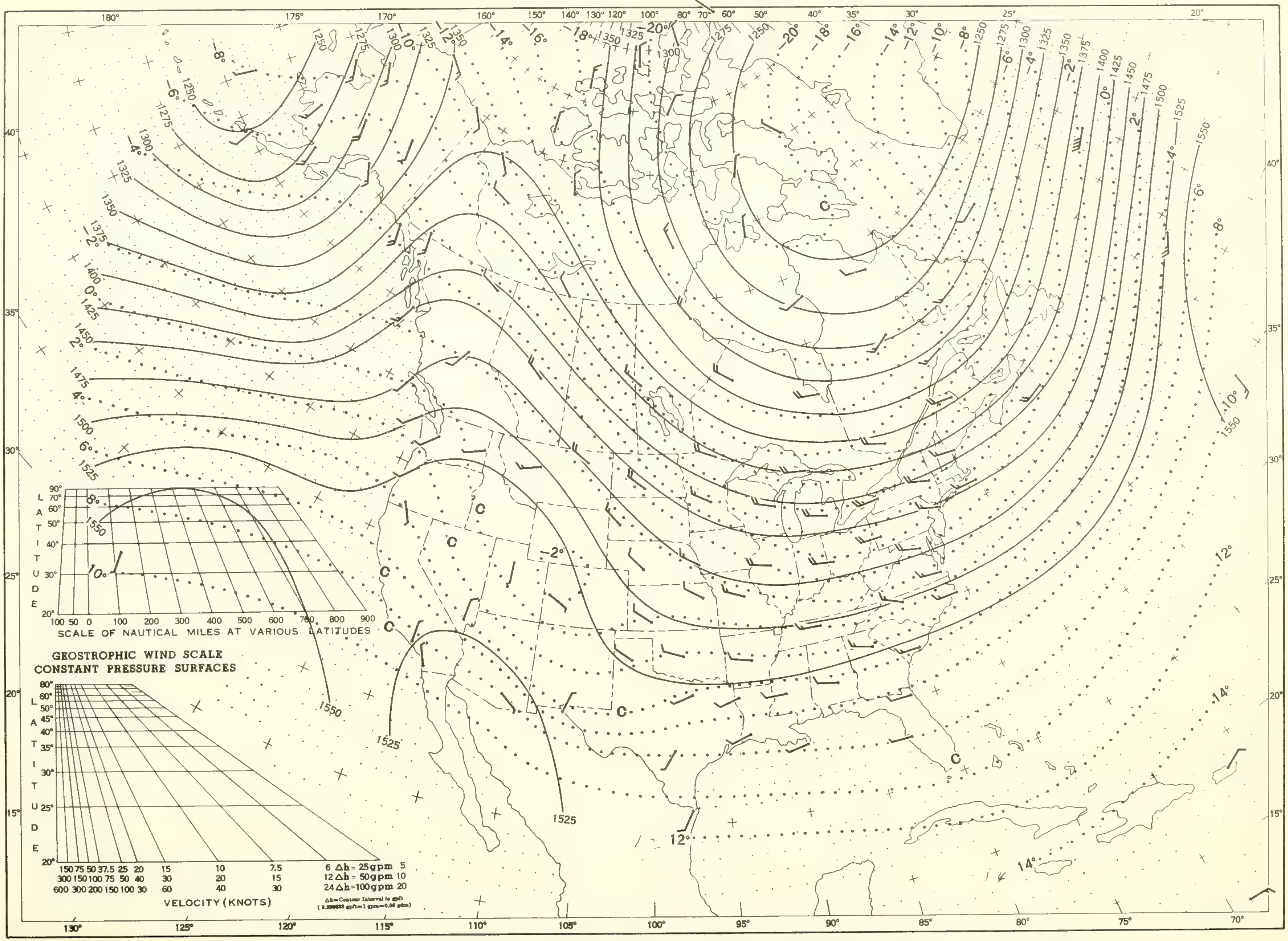
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, December 1960. Inset: Departure of Average Pressure (mb.) from Normal, December 1960.



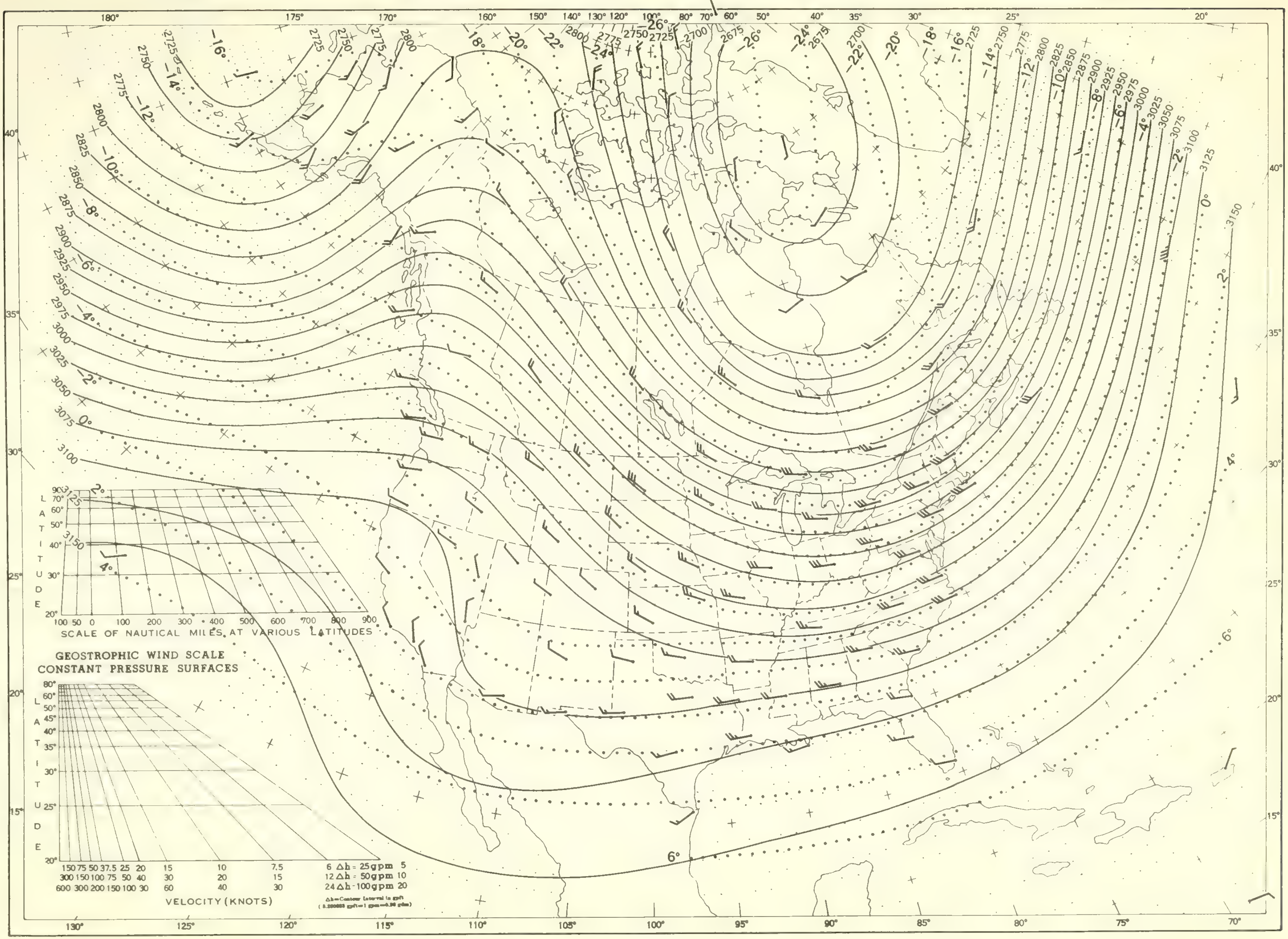
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 1200 GMT, December 1960. Average Height and Temperature, and Resultant Winds.



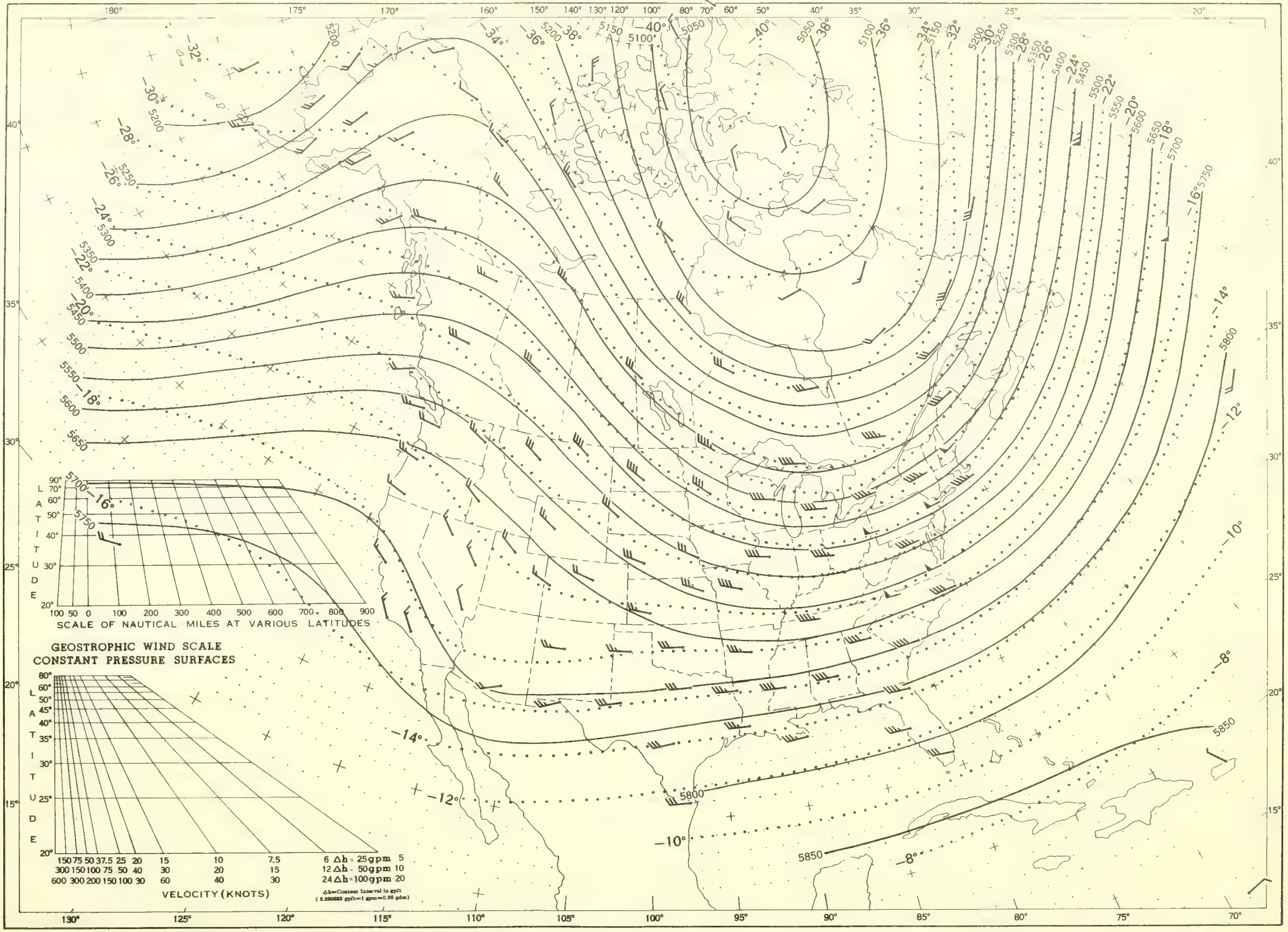
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XIII. 700-mb. Surface, 1200 GMT, December 1960. Average Height and Temperature, and Resultant Winds.



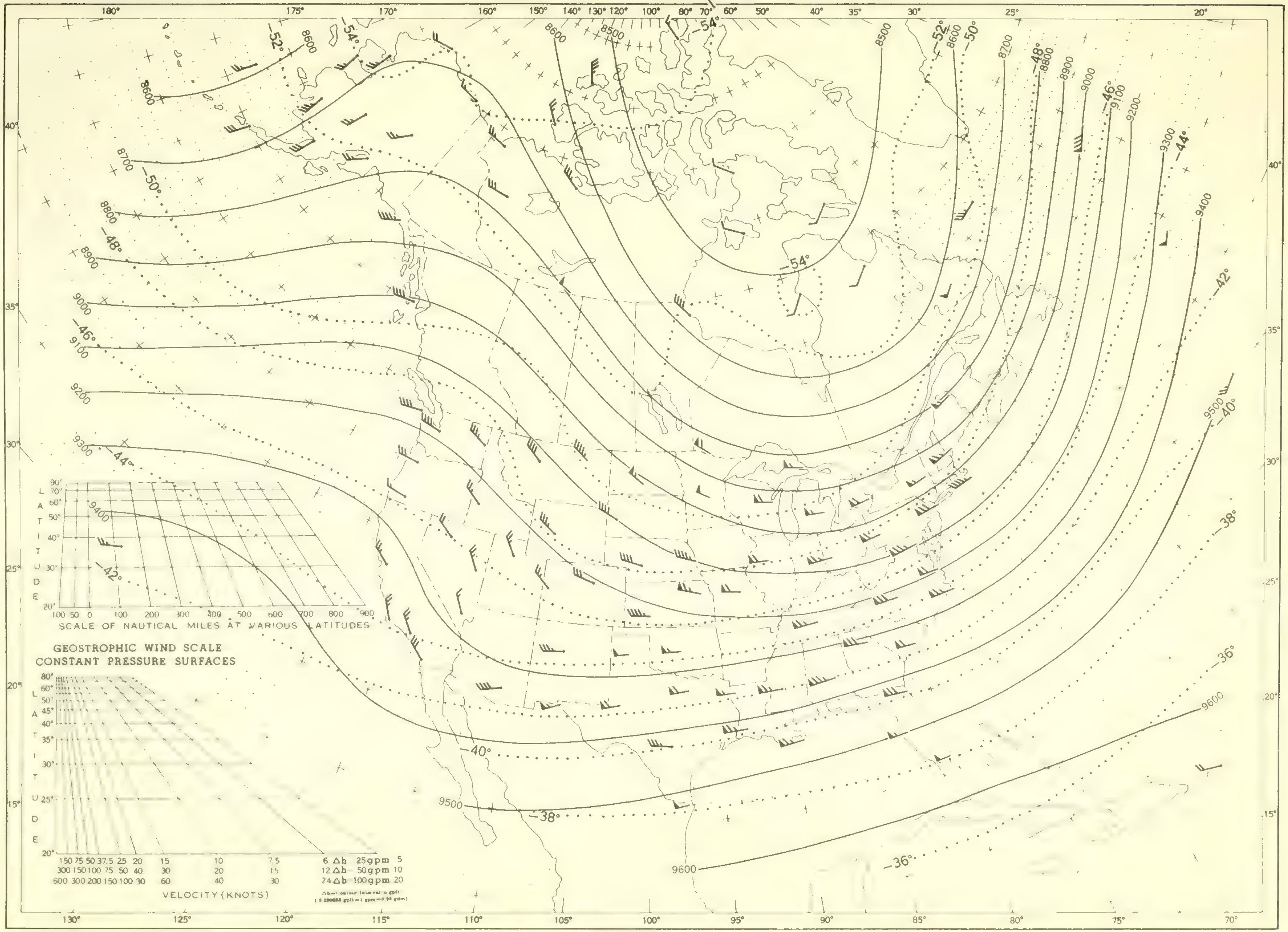
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 1200 GMT, December 1960. Average Height and Temperature, and Resultant Winds.



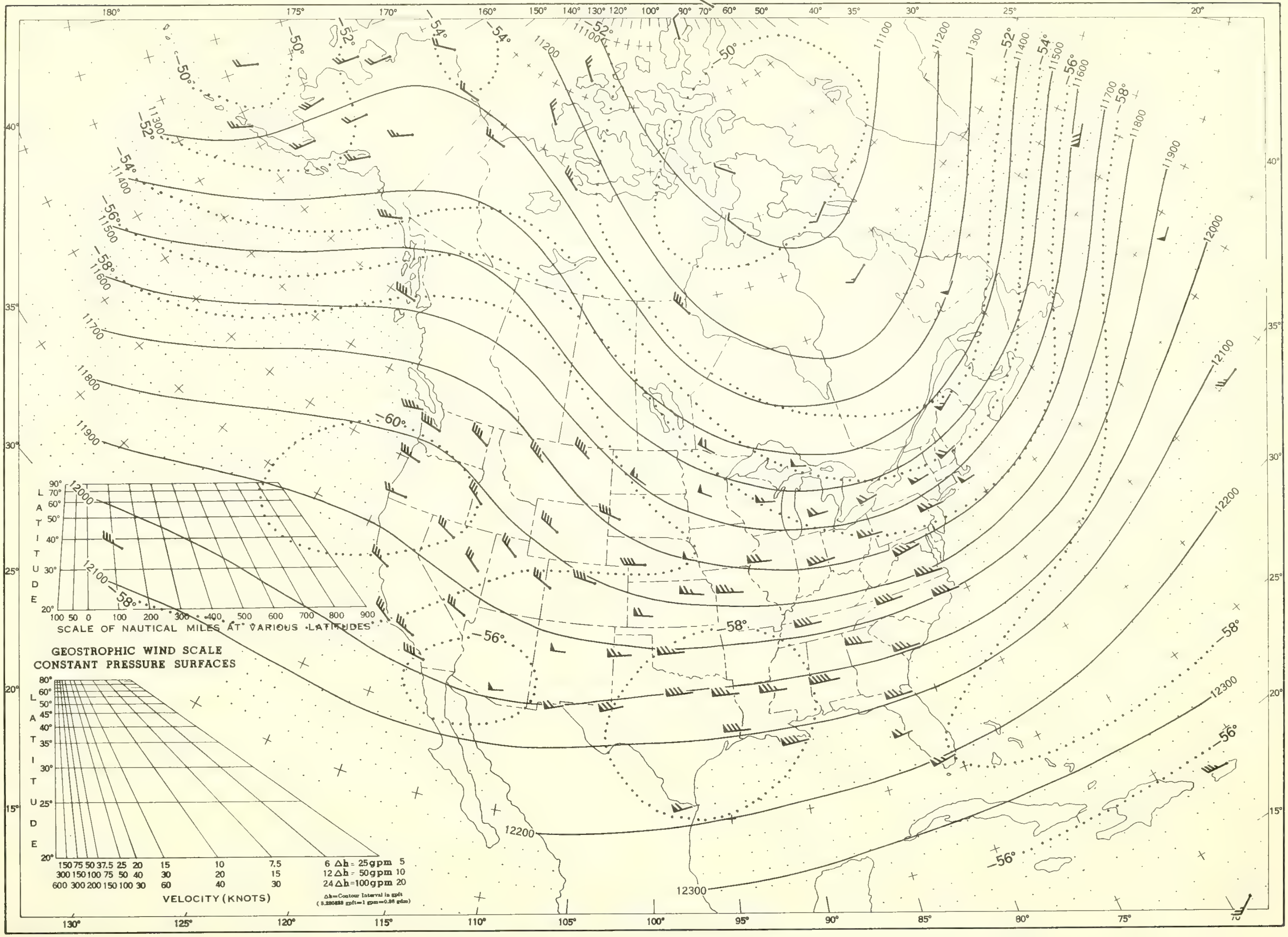
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 1200 GMT, December 1960. Average Height and Temperature, and Resultant Winds.



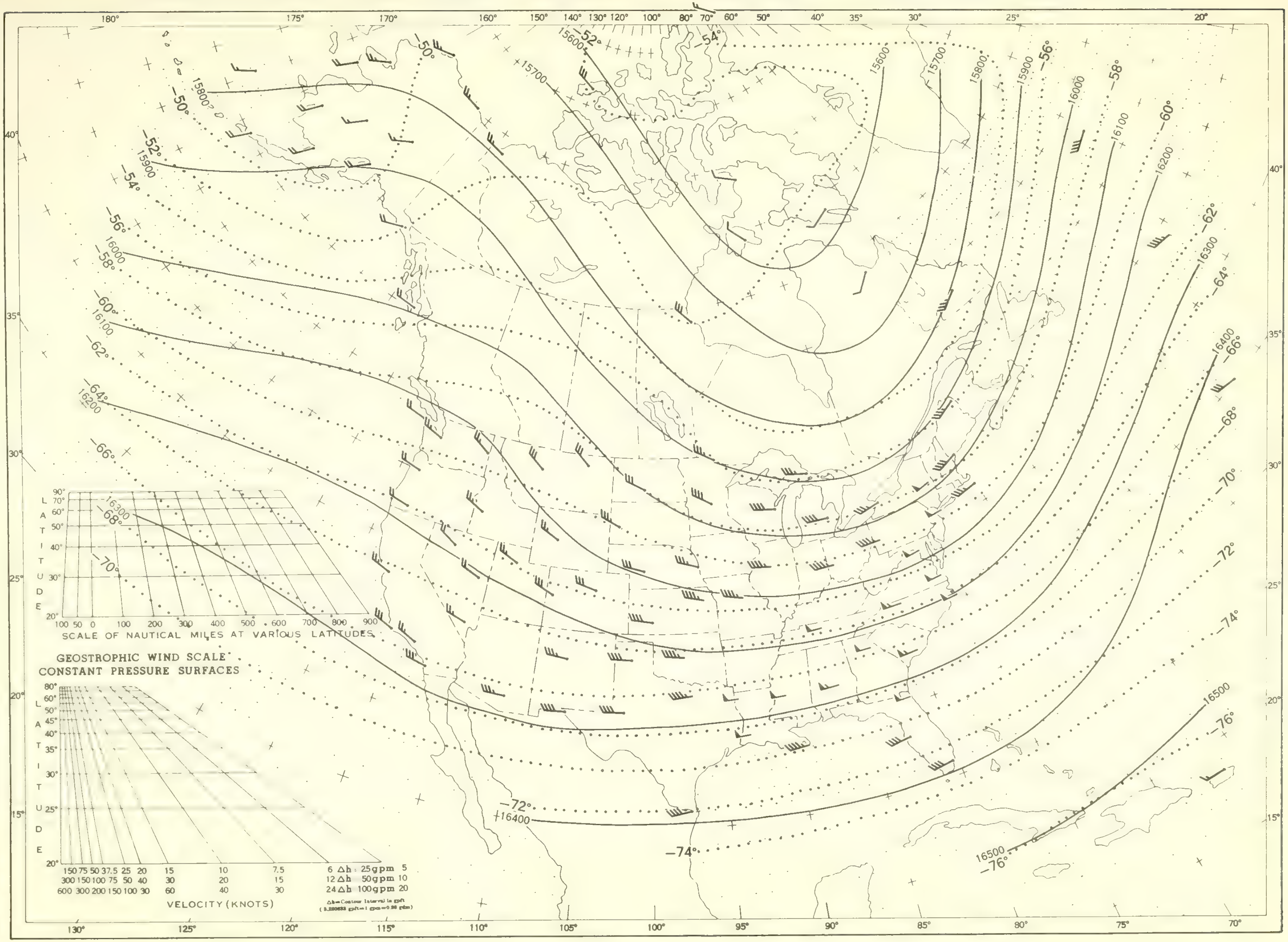
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 1200 GMT, December 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

Chart XVII. 100-mb. Surface, 1200 GMT, December 1960. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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ANNUAL 1960
Volume 11 No. 13

ASHEVILLE: 1961

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 11 No. 13 ANNUAL 1960

GENERAL SUMMARY OF WEATHER CONDITIONS

Compiled by L. H. Seamon
Climatology, U. S. Weather Bureau, Washington, D. C.

GENERAL. --Heat and drought in the Far West during the warm season, frequent winter-type storms east of the Rocky Mountains, heavy rainfall and floods in Texas, and a destructive hurricane in September were the weather highlights of 1960. East of the Rockies the coldest weather of the 1959-1960 winter came in March -- a very unusual occurrence. Deficient winter snowfall in the western mountains, followed by a hot, dry summer resulted in short irrigation water in some sections, and created favorable conditions for forest fires which burned large tracts. A cold, wet spring and early summer in the Corn Belt delayed spring planting, but favorable weather in late summer and autumn favored development and late frost permitted maturity. Spring freezes cut production of fruit crops in some sections of the Far West, dry spring weather cut early hay crops in the Southeast, and July heat cut grain crops in the Northwest and northern Great Plains. Despite all these vicissitudes of weather, however, the overall crop production was the greatest of record.

JANUARY-MARCH. --The weather during the first 3 months of 1960 generally was cold and stormy east of the Rocky Mountains. During a cold wave in the Far West early in January, freezing temperatures in the Far Southwest damaged some young fruit trees in southern California and some fruit and vegetables in the vicinity of Yuma, Ariz. During another cold period, felt mostly east of the Rockies from the 18th to 24th of January, a freeze in the South extensively damaged Florida's winter vegetable crops. The latter part of January and the first 10 days of February were a period of nationwide mild weather, only to be followed by 2 weeks of nationwide below-normal temperatures as the weather became progressively colder east of the Rockies through the first week of March and remained unusually cold until near the end of the month.

This prolonged cold period east of the Rockies resulted in the coldest February in 25 to 40 years in much of the central portion of the Nation and the coldest March on record at most stations in an area including eastern portions of Kansas and Nebraska and extending from Iowa, Missouri, and Arkansas to the Atlantic coast. At Peoria, Ill., where records began in 1856, March 1960 was 5.8° colder than the previous coldest March of 1912. For the following states, low temperature records for March were equaled or new ones established: Iowa, -31°; Missouri, -26°; West Virginia, -22°; Maryland, -20°; Illinois, -19°; Kentucky, -14°; Mississippi, -8°; Delaware and Tennessee, -1°; and South Carolina, 1°. At Burlington and Dubuque, Iowa, the Mississippi River remained frozen over until the last day or two of March, and was not opened for navigation until the 31st, the latest date in many years.

Snowfall during February and March was unprecedented in much of the area east of the Rocky Mountains. Many stations in the central portion of the country measured their greatest snowfall for February, including Goodland, Kans., 25.4 inches; Kansas City, Mo., 20.7; Lincoln, Nebr., 19.2; Lexington, Ky., 16.4; and Lake Charles, La., 5.0 inches. At many stations from the central portion of the country to the Atlantic coast, March snowfall was the greatest of record as storm systems moved across the eastern half of the Nation at about 4-day intervals. Among the new March snowfall records were: Columbia, Mo., 24.5 inches; Louisville, Ky., 22.9; Pittsburgh, Pa., 21.3; Richmond, Va., 19.7; Charleston, S. C., 1.0; Atlanta, Ga., 4.8; and Nantucket, Mass., 40.2 inches, which was the greatest total there for any month. At the end of March new record seasonal totals were reported by a number of stations in the Midwest, including a 68.8-inch total at Dubuque, Iowa, where records go back 98 years. The heavy snowfall melted very slowly owing to the persistent cold weather and accumulations reached record depths at many stations, among which was Concordia, Kans., where a 25.0-inch depth on March 16 was the greatest depth ever measured there in any month.

During the first few days of March a destructive combination of glaze, sleet, and snow from southern Arkansas to the southern Appalachian region damaged forests, power- and communication lines, and farm buildings, and forced many schools and businesses to close from 2 to 4 days; a number of counties in northern Alabama and Georgia were declared disaster areas by the Federal Government. The heavy snow cover, however, protected the winter grain crop from the extreme cold. Heavy rains up to 15 inches fell in the Florida Peninsula March 15 to 18, and resulting floods damaged crops, roads, bridges, and houses.

In the Far West, temperatures were relatively mild during February and March, precipitation was below normal except above in the Pacific Northwest, and the mountain snowpack remained well below normal in most sections.

APRIL-MAY. --The weather of April was mild and rather dry in most of the country. The principal exceptions were heavy precipitation in the Pacific Northwest, from Missouri to the upper Lake region and in far southeastern areas. May was generally cool, with heavy precipitation in the northeastern quarter of the Nation, eastern Interior, and Pacific Northwest, and mostly below normal amounts elsewhere. Wide fluctuations of temperature, however, occurred across the Nation during the 2 months. During a sharp cold snap east of the Rocky Mountains the second week of April, lows of 21° at Valley Head, Ala., on the 10th and Blairsville Experiment Station, Ga., on the 11th equaled the lowest temperatures ever recorded in those States for that month, and at the same time a freeze in northern Florida was one of the latest spring freezes there on record. In contrast, temperatures east of the Rocky Mountains rose to midsummer levels during the latter parts of the second and third weeks. In the Far West, unusually cold weather prevailed through the latter half of April and the first week of May, and fruits were heavily damaged in some sections, particularly in Utah and Colorado. In the latter State, the amount and statewide extent of fruit damage caused by freezes on April 17 and 25 and May 6 were among the worst on record, with some fruit crops almost completely destroyed.

Rain, snowmelt, and ice jams caused considerable flooding during April in the lower Missouri and upper Mississippi River Basins, and rains caused some flooding in the Northeast and Southeast. Heavy rains also caused some flooding in eastern Texas at the end of April. Heavy rains early in May caused flooding in the east-central Great Plains and in several eastern sections, and late in the month heavy rains caused severe flash floods in Minnesota and eastern Oklahoma.

Intense thunderstorms occurred in Hawaii during the evening, night, and morning periods of May 13 and 14. Oahu reported its second hailstorm since 1904, and local flooding occurred on Oahu, Maui, Malokai, and Lanai. Rainfall generally totaled only 1 or 2 inches, but the rate of fall was high, causing floods that washed out crops, caused soil erosion, flooded houses and other buildings, and swept cars from roads. Lightning damaged some buildings, and hail broke windows.

On May 7, 8, and 9 heavy rains in the Virgin Islands, totaling up to 14 inches on St. Thomas Island and up to 10 inches on St. John resulted in several hundred thousand dollars flood damage.

In April a tornado on the 12th killed 3 persons and injured 66 at Sunnyside, Tex.; another tornado on the 28th injured 31 persons in Oklahoma City, Okla.; a hailstorm on the 26th caused damage estimated at $4 million in San Angelo, Tex.; and high winds in the Pacific Northwest on the 13th injured several persons and blew over power- and communication lines. In May numerous tornadoes, particularly in the middle Mississippi Valley and southern Great Plains, caused considerable local damage, and 23 persons were killed by these storms in eastern Oklahoma on the 5th.

In much of the Corn Belt cold, wet weather during May hampered planting and at the end of the month barely more than half of the crop was planted compared with an average of four-fifths for that date.

SUMMER (June-August). --In the Far West, the summer was unusually hot and among the driest on record in many central and southern sections. In the Far Southwest, extreme summer heat persisted throughout the month of June, with a June high of 95° for downtown San Francisco on the 2d and an alltime high of 109° for El Paso, Tex., on the 21st. This was the hottest June on record at Yuma, Ariz. (92.3°); Bakersfield, Calif. (83.7°); Las Vegas, Nev. (87.4°); and El Paso, Tex. (85.0°). June 1960 in some parts of the Far West also was among the driest Junes in 10 to 40 years. In the Great Basin, irrigation water was below normal requirements, ranges and nonirrigated crops deteriorated, and a high fire hazard existed. In July the heat and drought became more intense and extensive. Average temperatures for the month were the highest on record at a number of stations including Boise, Idaho, and Salt Lake City, Utah. Eleven percent of all stations in the Far West reported no rain at all during July. August was somewhat cooler in the Far West, with above-normal precipitation in northern areas. Dry weather persisted in central and southern areas, however, and from about the 21st through the 23d, fires in Tahoe and Toiyabe National Forests burned over 35,000 acres. Late in August a cold air mass covered the Far West reducing temperatures to record low levels for so early in the season, and heavy early-season snows fell in the mountains of Idaho and western Montana.

East of the Rocky Mountains the summer was generally cool and wet. June and July were particularly cool in the northeastern quarter of the country where temperatures were below normal most of the time. At many stations in this area the temperature for the first time in many years failed to rise to 90°. At Milwaukee, Wis., the highest temperature for June, 81°, was lower in only one June since 1871. Louisville, Ky., had its coolest June (60.7°) on record. The coolest July on record was reported by many stations in northern areas, including Wilmington, Del.; Cleveland, Ohio; and Pittsburgh, Pa. This was the coolest July at Erie and Philadelphia, Pa., since 1895; at Milwaukee, Wis., since 1915; and the sixth coolest at Albany, N. Y., during the past 106 years. Temperatures averaged about normal for August.

Summer precipitation east of the Rocky Mountains was well above normal in parts of the lower Great Plains and lower Mississippi Valley, much below normal in the west-central and northwestern Great Plains, and generally within 25 percent of normal elsewhere. During June record-breaking rains fell in parts of the Ohio Valley and lower Great Plains, and in southeastern Texas torrential rains of 10 to 20 inches in the last week resulted in floods that caused millions of dollars damage and drowned 15 persons. Damaging flash floods occurred in the southwestern Great Plains as a result of heavy rains there again on July 3 to 9 and 21 to 25. Ft. Smith, Ark., reported a record July fall of over 10 inches, and Clovis, N. Mex., a record July total of over 13 inches. In August continued heavy rainfall in the lower Great Plains was also both heavy and frequent in the lower Mississippi Valley; rain occurred on 26 days at Baton Rouge, La., and a total of 16.58 inches at Vicksburg, Miss., set a new August record there. In Puerto Rico, damaging floods occurred in northwestern sections of the island on July 1.

Tropical storm Brenda on July 28 to 30 produced a large portion of the rainfall along the Atlantic Coast, with a record 24-hour total of 12.11 inches at Tampa, Fla. Additional heavy thunderstorm rains in Florida boosted monthly totals to new records for July at Lakeland (15.67 inches), Tampa (20.59 inches), Orlando (19.57 inches), and Jacksonville (16.21 inches).

Severe local storms during the summer took the usual toll of lives and property. In June a tornado caused a few million dollars damage in the Rotterdam-Schenectady area of New York State on the 24th. In August storms were blamed for the death of at least 40 persons and more than 100 injuries. On the 3d of August a seiche in lower Lake Michigan was the first ever forecast by the Weather Bureau; although the lake level rose 4 to 6 feet in many places, no loss of life occurred.

AUTUMN (September-November). --Mild temperatures were unusually persistent during the autumn months in most of the Nation. Crops that were planted late in the Corn Belt reached maturity with little or no damage as freezing was later than usual.

The weather of September was featured by hurricane Donna as she crossed the Florida Keys on the 10th, with winds up to 175 m. p. h., in gusts destroying or severely damaging 75 percent of the buildings in that area before curving northward up the southwest coast and passing directly over Ft. Myers where wind gusts up to 121 m. p. h., were recorded. Veering northeastward from Ft. Myers the hurricane crossed Florida's main citrus belt, reached the Atlantic between St. Augustine and Daytona Beach on the 11th, and then moved up the Atlantic Coast crossing New England into Canada on the 13th. Donna, one of the most destructive hurricanes ever to reach the United States, left a trail of crop and property damage totaling hundreds of millions of dollars; but owing to accurate and timely warnings, the death toll was slight compared to other lesser storms in the past. Donna produced from about 30 to 50 percent of the September rainfall in the Atlantic Coastal States. Heavy rainfall in southeastern Florida, in addition to that during Donna's passage, was produced by the remnants of tropical storm Florence during the fourth week, boosting the monthly total at Miami to 24. 40 inches, a new record there for any month.

Ethel, another hurricane which developed in the central Gulf of Mexico on September 14, was the first hurricane ever detected by the Navy MAMOS (Marine Automatic Meteorological Observation Station), a new meteorological instrument. Ethel maintained hurricane intensity only as far north as southeastern Louisiana, but spread heavy rains from the central Gulf area to the central Ohio Valley on the 16th and 17th. These tropical-storm rains helped the moisture situation in some southeastern sections. September was very dry in the Ohio Valley, from Iowa to Texas, in the northwestern Great Plains, and in Oregon and California. Rochester, N. Y., had only 0. 28 inch, the least amount there for September since 1830.

The first 10 days of September were extremely hot, particularly in the northeastern quarter where many stations recorded their highest temperatures of the year. Chicago, Ill., had its second warmest September in 89 years, and Los Angeles, Calif., its warmest month of the year. On the 4th, Spencer, Wyo., recorded 106°, the highest temperature ever recorded in Wyoming during September; and Roswell, N. Mex., recorded 102° on September 14, the highest there for so late in the season.

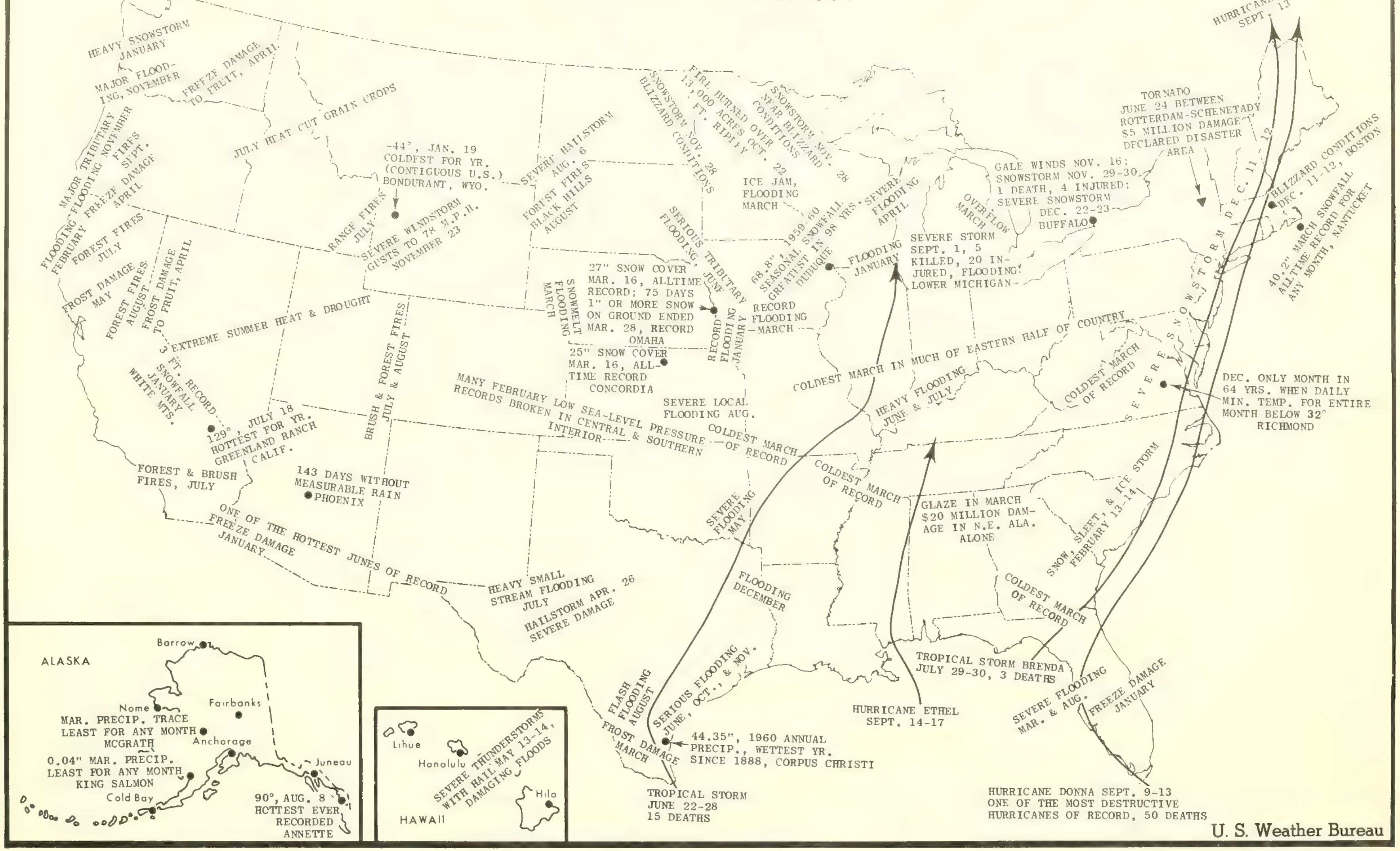
October weather was featured by heavy rains and extensive flooding in Texas and the lower Great Plains, but the month was extremely dry in the northern Great Plains and in California and the Great Basin of the Far West. Temperatures averaged near normal for the month, with no unusual hot or cold spells. There were relatively few severe local storms. In most areas October weather was very favorable for the maturity and harvesting of crops. Interesting to note was the fact that snowfall was unusually early at many northern stations during October; Boston, Mass., had a trace on the 24th, the earliest there in 20 years.

Temperatures for November averaged above normal over virtually the entire country, while precipitation varied from unseasonably heavy in the Far West to less than 25 percent of normal in parts of the central and lower Great Plains and Southeast and below normal amounts in nearly all areas east of the Continental Divide. November was abnormally cool during much of the first half. A sharp cold snap occurred in the Atlantic Coastal States on the 7th and 8th, and another in the midcontinent area from the 9th to the 11th when shallow lakes began to freeze over in the extreme North Central Interior and freezing extended to central Texas and Alabama. The second half of November was unusually mild, with late season high temperatures in the northern Great Plains on the 25th and in the Southeast on the 28th. Cold weather returned to much of the Nation the last 3 days of the month, however, with a temperature drop of 34° in 11 hours at Milwaukee, Wis., on the 28th, and a low of -15° at Huron, N. Dak., on the 30th, the lowest temperature there in November since 1897.

Heavy November precipitation in the Far West helped replenish soil moisture and water supplies after the prolonged drought, but was only a start in restoring the moisture and water situation to normal. The season's first blizzard occurred in the northern Great Plains on the 28th.

DECEMBER. --December weather was cold and stormy as storm systems moved across the eastern half of the country at 4-day intervals and with a lesser frequency in the Far West. Early in the month a Pacific storm lashed California with winds up to hurricane intensity in some areas and brought the second blizzard within a week to the northern Great Plains, and heavy snowfall to the upper Great Lakes region. Additional storms during the second week of December produced heavy snowfall from the Far Southwest to New England, with amounts exceeding a foot in southern New Mexico, west Texas, and in Atlantic coastal areas from Virginia northward. On the 11th and 12th, a blizzard raged in southeastern New England where 12 to 18 inches of snow, drifted by gale-force winds almost halted normal activities, and was described as one of the worst storms in many years in that region for so early in the season. Floods occurred along many streams in eastern Texas, western Louisiana, and southern Arkansas as a result of heavy rains in that region from the 5th to 11th. During a cold spell east of the Rocky Mountains from the 13th to 23d, sub-zero temperatures extended southward to the Ohio Valley and freezing to southern Texas and south-central Florida. A low of -9° at Louisville, Ky., on the 22d was the lowest ever recorded in December since the beginning of records there in 1872. This was among the coldest Decembers on record in the South and East. It was the fourth coldest December on record at Little Rock, Ark., and the coldest at Jacksonville, Fla., since 1935. At Richmond, Va., this was the only month during 64 years of record that every daily minimum temperature was below 32°. The year ended with a below-normal mountain snow pack in the Far West where the water supply outlook for the 1961 season was very dark. Heavy rains on November 30 through December 3, that totaled up to 18 inches in sections of Puerto Rico, caused washing rain and flood damage.

HIGHLIGHTS–YEAR 1960


HEAVY SNOWSTORM JANUARY
MAJOR FLOODING, NOVEMBER
FREEZE DAMAGE TO FRUIT, APRIL
MAJOR TRIBUTARY FLOODING NOVEMBER
FLOODING FEBRUARY
FIRES SEPT.
FREEZE DAMAGE APRIL
FOREST FIRES JULY
FROST DAMAGE MAY
FOREST FIRES AUGUST
FROST DAMAGE TO FRUIT, APRIL
JULY HEAT CUT GRAIN CROPS
-44°, JAN. 19 COLDFST FOR YR. (CONTIGUOUS U.S.) BONDURANT, WYO.
RANGE FIRES JULY
SEVERE WINDSTORM GUSTS TO 78 M.P.H. NOVEMBER 23
SEVERE HAILSTORM AUG. 6
FOREST FIRES BLACK HILLS AUGUST
SNOWSTORM NOV. 28 BLIZZARD CONDITIONS
FIRE BURNED OVER 13,000 ACRES OCT. 22 FT. RIPLEY
SNOWSTORM NOV. 28 NEAR BLIZZARD CONDITIONS
ICE JAM, FLOODING MARCH
68.8", 1959-60 SEASONAL SNOWFALL GREATEST IN 98 YRS. DUBUQUE
SEVERE FLOODING APRIL
SERIOUS TRIBUTARY FLOODING, JUNE
RECORD FLOODING MARCH
RECORD FLOODING JANUARY
FLOODING JANUARY
SEVERE STORM SEPT. 1, 5 KILLED, 20 INJURED, FLOODING: LOWER MICHIGAN
OVERFLOW MARCH
GALE WINDS NOV. 16; SNOWSTORM NOV. 29-30, 1 DEATH, 4 INJURED; SEVERE SNOWSTORM DEC. 22-23 BUFFALO
TORNADO JUNE 24 BETWEEN ROTTERDAM-SCHENETADY $5 MILLION DAMAGE DECLARED DISASTER AREA
HURRICANE DONNA SEPT. 13
BLIZZARD CONDITIONS DEC. 11-12, BOSTON
40.2" MARCH SNOWFALL ALLTIME RECORD FOR ANY MONTH, NANTUCKET
SEVERE SNOWSTORM DEC. 11-12
EXTREME SUMMER HEAT & DROUGHT
SNOWMELT FLOODING MARCH
27" SNOW COVER MAR. 16, ALLTIME RECORD; 75 DAYS 1" OR MORE SNOW ON GROUND ENDED MAR. 28, RECORD OMAHA
25" SNOW COVER MAR. 16, ALL-TIME RECORD CONCORDIA
COLDEST MARCH IN MUCH OF EASTERN HALF OF COUNTRY
COLDEST MARCH OF RECORD
DEC. ONLY MONTH IN 64 YRS. WHEN DAILY MIN. TEMP. FOR ENTIRE MONTH BELOW 32° RICHMOND
3 FT. RECORD SNOWFALL JANUARY WHITE MTS.
129°, JULY 18 HOTTEST FOR YR. GREENLAND RANCH CALIF.
BRUSH & FOREST FIRES JULY & AUGUST
MANY FEBRUARY LOW SEA-LEVEL PRESSURE RECORDS BROKEN IN CENTRAL & SOUTHERN INTERIOR
SEVERE LOCAL FLOODING AUG.
COLDEST MARCH OF RECORD
HEAVY FLOODING JUNE & JULY
COLDEST MARCH OF RECORD
FOREST & BRUSH FIRES, JULY
143 DAYS WITHOUT MEASURABLE RAIN PHOENIX
ONE OF THE HOTTEST JUNES OF RECORD
FREEZE DAMAGE JANUARY
SEVERE FLOODING MAY
GLAZE IN MARCH $20 MILLION DAMAGE IN N.E. ALA. ALONE
SNOW, SLEET, & ICE STORM FEBRUARY 13-14
HEAVY SMALL STREAM FLOODING JULY
HAILSTORM APR. 26 SEVERE DAMAGE
FLOODING DECEMBER
COLDEST MARCH OF RECORD
FLASH FLOODING AUGUST
SERIOUS FLOODING JUNE, OCT., & NOV.
FROST DAMAGE MARCH
44.35", 1960 ANNUAL PRECIP., WETTEST YR. SINCE 1888, CORPUS CHRISTI
TROPICAL STORM JUNE 22-28 15 DEATHS
HURRICANE ETHEL SEPT. 14-17
TROPICAL STORM BRENDA JULY 29-30, 3 DEATHS
SEVERE FLOODING MAR. & AUG.
FREEZE DAMAGE JANUARY
HURRICANE DONNA SEPT. 9-13 ONE OF THE MOST DESTRUCTIVE HURRICANES OF RECORD, 50 DEATHS
ALASKA
Barrow
Nome
Fairbanks
MAR. PRECIP. TRACE LEAST FOR ANY MONTH MCGRATH
Anchorage
0.04" MAR. PRECIP. LEAST FOR ANY MONTH KING SALMON
Cold Bay
Juneau
90°, AUG. 8 HCTTEST EVER RECORDED ANNETTE
Lihue
Honolulu
SEVERE THUNDERSTORMS WITH HAIL MAY 13-14, DAMAGING FLOODS
Hilo
HAWAII

U. S. Weather Bureau

EXCESSIVE PRECIPITATION

(Excessive Short Duration Rainfall)

YEAR 1960

This table contains statistics of maximum amounts of rainfall during the calendar year 1960. Data presented in this table are generally from stations equipped with recording gages. Stations are at City Office locations unless otherwise shown.

Excessive precipitation data for the years 1896-1935 inclusive, generally present the accumulated amounts of precipitation for each 5, 10, or 20 minute intervals during storms in which the rate of fall equaled or exceeded .25 inch in any 5 minute period, or .30 in any 10 minute period, or .35 in any 15 minute period, etc., the tabulation beginning with the 5 minute period where the rate of .05 inch in 5 minutes began and continuing by 10 or 20 minute intervals up to 120 minutes. A detailed explanation of the method used may be found in the publications listed in the last paragraph of this explanation.

The present method, adopted with data for the calendar year 1936, gives the maximum fall of precipitation for the periods 5 to 180 minutes, the maximum amounts being taken for the periods in which the fall is greatest for the given time, and is tabulated to show maximum amounts for 5, 10, 15, 20, 30, 45, 60, 80, 100, 120, 150 and 180 minutes, even if the fall does not equal the excessive rate for some of the periods. (The 15 minute amount was not computed for 1936-43 and the 150 minute amount was not computed for 1944 through 1948).

The following Table A shows limits at which precipitation was considered excessive in this publication:

TABLE A

Duration (minutes)	Depth of precipitation (inches)	Duration (minutes)	Depth of precipitation (inches)
5	.25	60	.80
10	.30	80	1.00
15	.35	100	1.20
20	.40	120	1.40
30	.50	150	1.70
45	.65	180	2.00

This table is made up from the formula, $A = t + 20$ where A is the accumulated depth in hundredths of inches and t is the time in minutes.

For the years 1936 through 1948 stations in North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Arkansas, Louisiana, Texas, Oklahoma, and San Juan, P. R. used the limits shown in the following Table B:

TABLE B

Duration (minutes)	Depth of precipitation (inches)	Duration (minutes)	Depth of precipitation (inches)
5	.40	60	1.50
10	.50	80	1.90
15	.60	100	2.30
20	.70	120	2.70
30	.90	150	3.30
45	1.20	180	3.90

This table is made up from the formula $A = 2t + 30$. Its use, however, was discontinued at the end of 1948 and Table A is used by all sections for 1949 and the following years.

Publication of Data. A summary of maximum precipitation data for the years prior to 1896 is published in the annual report of the Chief of the Weather Bureau for 1895-1896. Excessive precipitation data for the period 1881-1896 are published in the annual report of the Chief of the Weather Bureau 1896-1897. Data for the years 1897 through 1934 have been published in the appropriate annual reports of the Chief of the Weather Bureau. For the years 1935 through 1949 these data are published in the appropriate issue of the United States Meteorological Yearbook. For 1950 and succeeding years excessive precipitation are presented in the annual issues of the Climatological Data, National Summary.

EXCESSIVE SHORT DURATION RAINFALL

YEAR 1960

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
ALABAMA												
Birmingham Airport												
Jan. 29	0.30	0.42	0.54	0.63	0.67	0.73	0.82	0.94	1.06	1.11	1.16	1 19
May 26	.25	.45	.60	.75	.79	.95	.95	.95	.95	1.00	1.05	1.06
June 24	.25	.35	.60	.65	.72	1.00	1.02	1.02	1.04	1.04	1.04	1.06
June 26	.20	.30	.37	.40	.44	.49	.52	.52	.52	.52	.52	.52
July 4	.30	.33	.37	.40	.46	.50	.50	.50	.50	.50	.50	.50
Aug. 22	.30	.50	.55	.65	.95	1.02	1.08	1.08	1.12	1.18	1.18	1.18
Sept. 16	.23	.35	.50	.58	.70	.77	.82	.89	.98	1.05	1.16	1.30
Huntsville Airport												
Jan. 2	.23	.35	.41	.44	.56	.61	.64	.66	.67	.70	.73	.77
June 28	.20	.30	.35	.52	.64	.78	.86	.87	.88	.88	.88	.88
July 17	.16	.31	.41	.52	.69	1.10	1.16	1.30	1.40	1.65	2.00	2.55
Aug. 8	.18	.34	.49	.65	.77	.82	.94	1.13	1.14	1.14	1.14	1.14
Sept.16	.26	.40	.48	.54	.58	.67	.72	.92	.92	.92	.94	.98
Montgomery Airport												
Mar. 29	.12	.22	.31	.38	.49	.70	.93	1.03	1.07	1.08	1.10	1.14
May 6	.33	.57	.69	.73	.78	.84	.92	.97	.99	1.03	1.07	1.08
May 26	.20	.38	.47	.51	.55	.56	.56	.56	.56	.62	.63	.63
June 3	.15	.23	.32	.41	.51	.57	.64	.80	1.09	1.18	1.29	1.39
June 25	.24	.47	.61	.63	.66	.67	.67	.67	.67	.67	.72	.75
July 9	.26	.46	.52	.62	.92	1.13	1.15	1.15	1.15	1.15	1.15	1.15
July 16	.15	.29	.41	.46	.52	.55	.58	.58	.58	.58	.58	.58
July 27	.28	.49	.67	.85	1.16	1.44	1.48	1.83	1.91	1.91	1.91	1.91
Aug. 9	.25	.38	.47	.59	.75	.81	.84	.84	.89	.90	.90	.90
Aug. 13	.19	.36	.45	.48	.48	.48	.48	.48	.48	.48	.48	.48
Sept. 16	.25	.31	.38	.40	.54	.67	.77	.94	1.10	1.20	1.26	1.26
Sept. 22	.55	.82	.98	1.03	1.11	1.40	1.49	1.55	1.56	1.56	1.56	1.56
ALASKA												
Anchorage Airport						None						
Annette Airport						None						
Cold Bay						None						
Cordova Airport						None						
Fairbanks Airport						None						
Juneau Airport						None						
King Salmon Airport						None						
Yakutat Airport						None						
ARIZONA												
Phoenix Airport						None						
Prescott Airport												
Aug. 31	.32	.39	.39	.39	.39	.39	.39	.39	.41	.46	.51	.54
Tucson Airport												
Aug. 21	.19	.30	.33	.37	.42	.46	.48	.48	.49	.49	.49	.49
Winslow Airport												
Jul. 27	.20	.34	.51	.53	.62	.69	.72	.73	.74	.75	.75	.75
Yuma Airport						None						
ARKANSAS												
Fort Smith Airport												
May 5	.29	.44	.48	.50	.68	1.07	1.12	1.15	1.16	1.17	1.18	1.19
May 5	.21	.33	.45	.53	.86	1.18	1.31	1.55	1.65	1.74	1.83	1.94
May 18	.50	.75	.95	1.09	1.36	1.44	1.61	1.68	1.73	1.86	2.00	2.11
May 20	.21	.30	.31	.35	.36	.37	.39	.40	.41	.43	.46	.48
May 25	.28	.37	.40	.41	.44	.46	.46	.46	.56	.56	.56	.56
Jul. 4	.30	.57	.75	.89	1.13	1.20	1.23	1.27	1.27	1.27	1.27	1.27
Jul. 22	.34	.50	.60	.61	.64	.66	.68	.68	.68	.68	.68	.69
Jul. 22	.34	.53	.67	.69	.86	.94	.99	1.01	1.01	1.01	1.06	1.07
Jul. 23	.42	.69	.72	.74	1.03	1.21	1.30	1.67	2.05	2.20	2.80	2.87
Jul. 23	.13	.22	.30	.36	.50	.62	.64	.69	.70	.71	.79	.96
Aug. 16	.23	.38	.47	.47	.47	.48	.48	.49	.50	.51	.51	.51
Sept. 9	M	M	M	M	.56	.59	.60	.66	.69	.69	.70	.70
Little Rock Airport												
May 5	.24	.32	.37	.42	.43	.48	.52	.60	.68	.69	.69	.78
May 6	.48	.68	.80	.84	.94	1.03	1.14	1.26	1.34	1.46	1.48	1.49
May 19	.18	.34	.46	.52	.63	.68	.90	.93	1.02	1.05	1.07	1.08
May 20	.18	.33	.42	.55	.67	.72	.77	.80	.84	.89	.92	.96
June 24	.20	.38	.46	.46	.49	.49	.49	.49	.49	.49	.49	.49
June 26	.44	.84	1.04	1.07	1.33	1.57	1.59	1.60	1.60	1.60	1.62	1.64
July 4	.30	.48	.54	.57	.60	.61	.61	.63	.63	.63	.63	.63
July 27	.20	.34	.36	.40	.40	.40	.40	.40	.40	.40	.40	.40
Aug. 20	.22	.38	.56	.62	.74	.84	.84	.84	.84	.84	.84	.96
Sept. 24	.41	.78	.98	1.09	1.24	1.42	1.57	2.32	2.51	2.86	3.37	3.46
Nov. 15	.38	.39	.39	.46	.46	.48	.48	.48	.50	.50	.51	.51
Texarkana Airport												
Jan. 13	.18	.22	.30	.34	.53	.63	.72	1.06	1.10	1.19	1.40	1.55
May 5	.30	.55	.75	.95	1.20	1.47	1.53	1.53	1.53	1.53	1.53	1.53
May 6	.26	.38	.42	.44	.46	.48	.49	.50	.50	.50	.50	.50
May 31	.25	.50	.62	.63	.64	.66	.67	.68	.68	.68	.68	.68
July 5	.28	.38	.48	.53	.58	.63	.68	.71	.78	.85	.96	1.03
Aug. 7	.25	.41	.50	.62	.71	.74	.75	.75	.75	.75	.75	.75
Aug. 9	.25	.42	.57	.59	.60	.60	.61	.63	.63	.63	.65	.97
Aug. 10	.30	.45	.67	.87	1.01	1.30	1.41	1.44	1.49	1.53	1.59	1.59
Aug. 20	.12	.23	.34	.46	.58	.70	.82	.85	.86	.95	.95	.97
Aug. 21	.26	.32	.43	.61	.72	.84	.92	.98	1.04	1.06	1.09	1.10
Aug. 28	.55	.63	.64	.65	.65	.65	.65	.65	.65	.65	.65	.65
Sept. 24	.32	.60	.64	.68	.78	.80	.83	1.23	1.24	1.24	1.26	1.29
Oct. 5	.15	.30	.37	.43	.46	.69	.73	.77	.81	.83	.87	.87
Oct. 29	.20	.29	.35	.46	.48	.49	.50	.51	.52	.52	.52	.52
CALIFORNIA												
Bakersfield Airport						None						
Blue Canyon Airport						None						
CALIFORNIA (Cont'd.)												
Burbank Airport												
Nov. 5	0.08	0.16	0.25	0.29	0.54	0.56	0.58	0.59	0.75	0.82	0.87	0.88
Nov. 6	.25	.30	.33	.35	.40	.52	.53	.54	.54	.54	.54	.54
Eureka						None						
Fresno Airport						None						
Mt. Shasta						None						
Red Bluff Airport												
Nov. 13	.17	.29	.42	.46	.62	.64	.64	.65	.65	.65	.65	.65
Dec. 1	.18	.25	.32	.38	.52	.71	.84	1.01	1.10	1.25	1.40	1.52
Sacramento						None						
San Diego Airport												
Jan 12	.18	.35	.45	.51	.59	.66	.69	.72	.76	.81	.89	.95
San Francisco						None						
COLORADO												
Alamosa Airport												
Aug. 1	.21	.32	.35	.39	.47	.54	.56	.59	.59	.60	.61	.61
Denver Airport												
July 3	.18	.33	.42	.53	.62	.64	.64	.64	.64	.64	.64	.64
Grand Junction AP						None						
Pueblo Airport												
June 8	.33	.55	.80	.94	1.05	1.10	1.11	1.12	1.13	1.13	1.13	1.13
July 4	.26	.42	.62	.69	.77	.78	.79	.80	.80	.80	.83	.86
July 11	.18	.26	.34	.40	.59	.68	.68	.69	.69	.69	.69	.69
CONNECTICUT												
Bridgeport Airport												
July 3	.30	.60	.65	.74	.87	.94	.96	1.00	1.03	1.04	1.04	1.04
July 30	.42	1.00	1.15	1.45	1.67	1.90	1.97	2.10	2.52	2.71	2.95	3.00
Sept. 12	.15	.21	.36	.46	.60	.82	1.07	1.35	1.56	1.88	2.22	2.58
Nov. 1	.22	.30	.37	.48	.51	.51	.55	.67	.71	.82	.84	.92
Hartford Airport												
June 3	.30	.43	.45	.46	.50	.57	.57	.57	.57	.57	.57	.57
June 4	.40	.47	.49	.50	.60	.65	.76	.88	.91	1.14	1.20	1.23
June 4	.16	.32	.45	.53	.54	.56	.56	.56	.56	.56	.56	.56
July 13	.32	.48	.58	.64	.84	.94	1.01	1.05	1.08	1.13	1.18	1.20
July 30	.15	.20	.25	.30	.40	.60	.85	1.15	1.35	1.50	1.75	2.00
Sept. 12	.15	.20	.23	.27	.38	.50	.70	.93	1.20	1.40	1.80	2.20
Sept. 20	.15	.28	.37	.40	.42	.55	.60	.62	.67	.77	.85	.88
Nov. 30	.30	.43	.56	.67	.88	1.00	1.02	1.04	1.05	1.06	1.09	1.12
DELAWARE												
Wilmington Airport												
May 21	.18	.35	.45	.55	.67	.71	.73	.77	.78	.79	.80	.81
July 11	.31	.50	.72	.84	1.12	1.14	1.14	1.14	1.14	1.14	1.14	1.14
July 30	.18	.29	.38	.43	.55	.72	.82	.94	1.06	1.20	1.46	1.54
Aug. 5	.16	.28	.40	.44	.54	.54	.54	.54	.54	.54	.54	.54
Aug. 15	.28	.36	.40	.48	.50	.52	.52	.52	.52	.52	.52	.52
Aug. 31	.46	.74	.96	1.08	1.15	1.17	1.18	1.19	1.19	1.19	1.19	1.20
Sept. 11	.24	.33	.34	.34	.34	.36	.36	.36	.36	.36	.52	.56
Sept. 12	.14	.22	.28	.35	.62	.66	.81	.95	1.11	1.41	1.75	2.06
Sept. 19	.48	.73	1.01	1.27	1.70	1.89	1.93	1.96	1.97	1.98	1.98	1.98
†												
FLORIDA												
Apalachicola												
Feb. 13	.33	.53	.75	1.00	1.16	1.20	1.25	1.25	1.25	1.25	1.25	1.26
Feb. 25	.31	.51	.68	.79	1.04	1.46	1.56	1.64	1.73	1.79	1.84	1.91
Apr. 2	.20	.34	.43	.50	.63	.84	.93	1.04	1.09	1.14	1.16	1.16
Apr. 3	.26	.48	.58	.62	.65	.67	.70	.74	.77	.81	.89	.98
May 10	.22	.37	.49	.63	.71	.76	.77	.77	.77	.77	.77	.77
June 8	.48	.69	.83	.93	.98	1.06	1.09	1.52	1.61	1.65	1.72	1.72
June 20	.25	.30	.39	.44	.46	.47	.47	.47	.47	.47	.47	.49
July 11	.25	.34	.39	.45	.45	.45	.45	.49	.49	.49	.49	.49
July 11	.27	.35	.37	.39	.39	.39	.42	.46	.46	.46	.46	.46
Sept. 7	.19	.37	.43	.46	.48	.48	.49	.49	.49	.49	.49	.49
Sept. 8	.25	.38	.58	.65	.72	.75	.77	.81	.86	.89	1.30	1.42
Sept. 8	.61	.87	.95	.96	1.05	1.11	1.11	1.14	1.20	1.47	1.62	1.91
Sept. 15	.37	.42	.50	.50	.50	.50	.50	.50	.50	.58	.61	.66
Sept. 28	.44	.81	1.16	1.37	1.42	1.51	1.58	1.60	1.60	1.60	1.60	1.60
Oct. 19	.25	.38	.48	.60	.68	.69	.72	.72	.72	.72	.72	.72
Daytona Beach AP												
Feb. 5	.30	.45	.55	.80	.97	1.01	1.03	1.06	1.14	1.20	1.28	1.79
Feb. 24	.50	.80	1.15	1.45	1.83	2.42	2.72	3.03	3.25	3.43	3.51	3.52
Feb. 25	.24	.40	.54	.60	.82	1.14	1.40	1.47	1.49	1.50	1.50	1.50
Mar. 17	.25	.30	.32	.44	.62	.80	.90	1.10	1.17	1.23	1.39	1.48
June 2	.42	.70	1.00	1.25	1.53	1.59	1.62	1.69	1.69	1.69	1.69	1.69
June 4	.41	.81	.90	.92	.95	.97	.99	.99	1.02	1.06	1.10	1.11
June 5	.17	.30	.43	.44	.44	.45	.45	.45	.48	.52	.53	.53
June 6	.30	.60	.83	.88	1.18	1.53	1.63	1.85	2.01	2.05	2.08	2.08
June 16	.19	.38	.48	.55	.77	1.07	1.19	1.22	1.25	1.27	1.27	1.27
June 17	.25	.40	.44	.45	.46	.46	.46	.46	.46	.46	.46	.46
June 21	.15	.30	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32
June 22	.35	.70	.83	.90	1.08	1.18	1.20	1.20	1.20	1.20	1.52	1.58
July 2	.38	.45	.53	.55	.57	.57	.57	.57	.57	.57	.57	.57
July 5	.37	.62	.64	.70	.80	.80	.80	.80	.80	.80	.80	.82
July 12	.25	.30	.35	.41	.42	.42	.42	.42	.42	.51	.52	.52
July 18	.43	.73	.88	1.12	1.38	1.49	1.54	1.57	1.58	1.59	1.66	1.68
July 19	.25	.48	.60	.80	.88	.91	1.01	1.09	1.09	1.25	1.37	1.37
Aug. 11	.45	.90	.91	.92	.92	.92	.93	.93	.94	.95	.95	.95
Aug. 11	.25	.28	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
Aug. 11	.17	.30	.37	.63	1.03	1.25	1.27	1.35	1.35	1.35	1.35	1.35
Aug. 26	.53	.88	1.00	1.15	1.38	1.39	1.39	1.41	1.42	1.43	1.44	1.45
Sept. 10	.25	.37	.50	.55	.66	.80	.80	.86	.95	1.12	1.12	1.17
Sept. 11	.25	.30	.35	.50	.60	.65	.89	.92	1.27	1.62	1.95	2.10
Sept. 29	.25	.42	.52	.58	.66	.70	.79	.96	1.08	1.09	1.10	1.14
Fort Myers Airport												
Feb. 23	.23	.32	.35	.47	.60	.80	.83	.88	.89	.89	.89	.89
Mar. 18	.68	.70	.71	.71	.76	.86	.87	.87	.87	.87	.87	.89

M Missing

† District of Columbia data found at end of table.

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
FLORIDA (Cont'd.)												
Fort Myers AP (Cont'd.)												
Apr. 16	0.40	0.51	0.52	0.54	0.54	0.54	0.54	0.54	0.54	0.68	0.71	0.71
Apr. 21	.20	.37	.55	.62	.85	1.02	1.06	1.06	1.08	1.08	1.09	1.09
May 27	.30	.57	.71	.78	.86	.89	.90	.94	1.00	1.03	1.05	1.07
June 3	.56	.62	.73	1.05	1.12	1.19	1.19	1.20	1.20	1.20	1.20	1.20
June 25	.50	.58	.66	.69	.91	1.24	1.35	1.41	1.42	1.42	1.43	1.45
June 27	.20	.32	.37	.44	.47	.47	.48	.48	.48	.48	.48	.48
July 4	.50	.85	1.05	1.16	1.23	1.29	1.29	1.29	1.30	1.30	1.30	1.30
July 16	.60	.80	.95	.96	1.20	1.32	1.33	1.33	1.33	1.33	1.33	1.33
July 19	.45	.75	1.03	1.15	1.23	1.32	1.60	1.75	2.08	2.12	2.12	2.12
July 29	.26	.40	.50	.65	.81	.85	.89	.91	1.22	1.58	1.64	1.68
July 31	.31	.45	.55	.73	.85	.95	1.01	1.10	1.22	1.25	1.31	1.33
Aug. 6	.36	.51	.55	.58	.67	.70	.70	.71	.71	.71	.71	.72
Aug. 7	.32	.62	.69	.70	.80	.81	.81	.81	.81	.81	.81	.81
Aug. 14	.18	.33	.36	.36	.37	.37	.59	.64	.65	.65	.65	.66
Aug. 30	.24	.45	.50	.56	.60	.60	.60	.60	.60	.60	.60	.60
Aug. 31	.25	.40	.42	.44	.46	.46	.46	.46	.46	.46	.51	.53
Sept. 1	.75	1.01	1.26	1.39	1.50	1.57	1.62	1.62	1.62	1.62	1.62	1.64
Sept. 8	.27	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
Sept. 10	.30	.35	.55	.65	.80	.90	1.45	1.75	2.10	2.30	2.45	2.50
Sept. 27	.37	.60	.76	.82	.94	1.13	1.29	1.34	1.35	1.35	1.35	1.35
Oct. 31	.55	.60	.60	.62	.62	.62	1.02	1.20	1.21	1.21	1.24	1.26
Nov. 1	.17	.30	.43	.49	.78	1.20	1.45	1.55	1.58	1.64	1.76	1.80
Jacksonville Airport												
Feb. 4	.17	.31	.44	.49	.63	.69	.76	.77	.78	.80	.83	.85
Feb. 25	.20	.31	.41	.48	.63	.72	.87	1.02	1.12	1.23	1.37	1.48
Mar. 13	.63	.84	.91	.94	.96	1.00	1.13	1.14	1.23	1.34	1.54	1.56
Apr. 2	.38	.62	.86	1.01	1.18	1.30	1.32	1.32	1.82	2.15	2.22	2.25
June 3	.72	1.10	1.41	1.61	1.86	1.94	1.95	1.95	1.95	1.95	1.95	1.95
July 3	.39	.67	.88	1.09	1.44	1.95	2.15	2.41	2.41	2.41	2.42	2.42
July 4	.30	.56	.71	.81	.82	.82	.82	.82	.82	.82	.82	.82
July 7	.27	.39	.44	.44	.44	.44	.44	.44	.44	.44	.45	.47
July 8	.20	.33	.38	.39	.40	.40	.41	.63	.64	.64	.64	.64
July 9	.20	.38	.45	.45	.53	.66	.66	.66	.66	.66	.66	.66
July 9	.35	.56	.72	.94	1.02	1.03	1.03	1.04	1.04	1.04	1.04	1.04
July 11	.38	.59	.60	.60	.60	.62	.62	.63	.63	.63	.65	.65
July 15	.55	.80	1.01	1.12	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
July 16	.50	.80	1.01	1.12	1.61	2.22	2.60	3.22	3.36	3.47	3.51	3.60
July 19	.25	.25	.26	.27	.27	.29	.29	.29	.29	.29	.29	.29
July 29	.20	.30	.31	.31	.31	.31	.31	.31	.33	.33	.39	.39
Aug. 1	.35	.67	.97	1.17	1.45	1.56	1.58	1.58	1.58	1.58	1.58	1.58
Aug. 12	.31	.58	.75	.79	.81	.81	.82	.90	.96	.97	.97	.97
Aug. 23	.19	.28	.37	.44	.48	.49	.49	.55	.55	.55	.58	.58
Aug. 25	.57	.82	.92	.93	.93	.97	1.00	1.00	1.00	1.00	1.00	1.02
Aug. 31	.33	.52	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
Sept. 11	.35	.61	.73	.84	1.13	1.24	1.26	1.45	1.52	1.61	2.26	2.55
Sept. 30	.25	.45	.47	.47	.47	.47	.47	.47	.47	.47	.47	.47
Oct. 7	.27	.45	.57	.67	.69	.69	.69	.69	.69	.69	.69	.70
Key West Airport												
May 28	.20	.30	.40	.44	.70	.74	1.10	1.48	1.60	1.60	1.62	1.62
May 29	.12	.16	.32	.50	.68	.84	.94	1.02	1.12	1.40	1.50	1.58
May 30	.40	.62	.76	1.02	1.15	1.44	1.66	2.04	2.47	2.63	3.13	3.59
July 31	.38	.50	.51	.52	.52	.54	.54	.82	.84	.86	.92	.96
Aug. 7	.76	1.04	1.36	1.60	1.82	1.83	1.83	1.86	1.88	1.90	1.95	1.96
Aug. 18	.26	.38	.39	.42	.45	.55	.71	.89	1.03	1.10	1.12	1.12
Aug. 19	.26	.34	.47	.60	.64	.65	.65	.66	.66	.66	.66	.66
Aug. 30	M	M	M	M	M	1.70	1.70	1.70	1.70	1.70	1.70	1.70
Sept. 16	.32	.53	.70	.73	.73	.73	.73	.73	.73	.73	.73	.73
Sept. 30	.46	.80	.89	.91	.94	1.16	1.52	1.64	1.68	1.71	1.73	1.75
Oct. 1	.26	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
Oct. 5	.36	.50	.60	.66	.68	.68	.68	.68	.72	.88	.88	.92
Oct. 22	.26	.42	.45	.46	.46	.47	.47	.47	.47	.47	.47	.47
Miami												
Feb. 23	.17	.25	.36	.43	.49	.60	.67	.68	.83	.92	.97	.97
Feb. 26	.19	.28	.36	.40	.41	.41	.41	.41	.41	.41	.41	.41
Apr. 19	.38	.64	.75	.82	.92	.96	.98	1.03	1.21	1.23	1.35	1.47
Apr. 23	.18	.32	.38	.54	.61	.64	.64	.64	.64	.64	.66	.74
Apr. 24	.29	.42	.60	.77	1.01	1.17	1.39	2.07	2.43	2.53	2.72	2.97
Apr. 26	.26	.46	.59	.60	.61	.64	.64	.64	.64	.65	.65	.65
May 27	.26	.47	.56	.61	.66	.66	.74	.79	.79	.79	.79	.79
June 5	.22	.36	.49	.64	.86	.88	.93	.94	.94	.95	.95	.95
June 9	.68	1.21	1.72	1.96	2.40	2.73	2.86	2.87	2.87	2.87	2.87	2.87
July 27	.17	.29	.42	.51	.54	.55	.55	.57	.58	.59	.59	.60
July 30	.29	.47	.58	.63	.66	.66	.66	.72	.73	.76	.78	.80
July 31	.27	.41	.50	.56	.76	.87	.97	1.05	1.12	1.13	1.15	1.15
Aug. 6	.34	.64	.83	.92	.96	.96	.96	.96	.97	.99	1.00	1.00
Aug. 31	.16	.31	.38	.39	.40	.40	.48	.56	.57	.57	.57	.62
Sept. 5	.32	.42	.48	.56	.61	.75	.76	1.08	1.32	1.39	1.65	1.74
Sept. 6	.30	.60	.86	1.07	1.45	2.14	2.39	2.55	2.65	2.67	2.69	2.71
Sept. 10	.36	.53	.57	.62	.86	1.17	1.47	1.70	1.94	2.13	2.55	2.74
Sept. 17	.22	.33	.39	.40	.40	.41	.41	.41	.41	.41	.42	.42
Oct. 12	.29	.45	.69	.83	.92	1.23	1.67	2.21	2.45	2.54	2.55	2.55
Oct. 13	.43	.70	.95	1.16	1.48	1.69	1.79	1.79	1.79	1.79	1.79	1.79
Oct. 14	.33	.68	.84	1.03	1.15	1.61	1.62	1.62	1.62	1.62	1.62	1.62
Oct. 26	.33	.55	.78	.91	1.10	1.40	1.66	1.72	1.78	1.80	1.81	1.85
Oct. 31	.44	.78	.79	.95	1.16	1.17	1.17	1.62	1.64	1.67	1.67	1.74
Nov. 1	.25	.43	.55	.62	.82	.87	.88	.89	.90	.94	1.05	1.06
Dec. 12	.19	.31	.31	.31	.32	.34	.34	.34	.34	.34	.34	.34
Miami Airport												
Feb. 23	.20	.34	.42	.45	.50	.57	.70	.75	.80	.91	.93	.93
Feb. 26	.25	.30	.33	.35	.36	.36	.36	.36	.36	.36	.36	.36
Apr. 23	.20	.23	.38	.40	.50	.65	.80	1.00	1.00	1.15	1.55	1.55
Apr. 26	.45	.75	.95	1.05	1.14	1.17	1.20	1.20	1.20	1.20	1.20	1.20
May 2	.40	.70	.74	.75	.75	.75	.75	.75	.75	.75	.75	.75
May 8	.25	.40	.54	.61	.75	.76	.77	.77	.77	.77	.77	.77
June 5	.30	.56	.85	1.10	1.44	1.59	1.66	1.66	1.66	1.66	1.66	1.66
June 7	.25	.50	.54	.56	.56	.56	.56	.56	.56	.56	.56	.56
June 9	.18	.30	.38	.48	.50	.50	.50	.50	.50	.50	.50	.50
June 23	.26	.38	.48	.50	.55	.55	.55	.55	.55	.55	.55	.55
July 17	.25	.45	.65	.75	.92	.97	.99	1.00	1.00	1.00	1.01	1.01
July 30	.25	.45	.55	.55	.55	.55	.55	.60	.62	.65	.68	.72
July 30	.20	.35	.43	.50	.58	.58	.58	.63	.63	.63	.64	.65
Aug. 6	.30	.47	.60	.68	.68	.70	.70	.70	.71	.78	.81	.81
Aug. 31	.25	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28
Sept. 1	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29
Sept. 5	.25	.35	.49	.51	.52	.65	.67	.70	.96	1.00	1.05	1.14
Sept. 6	.50	.95	1.35	1.50	2.00	2.25	2.35	2.60	2.90	3.04	3.10	3.11
Sept. 9	.30	.40	.50	.55	.61	.62	.64	.64	.64	.64	.65	.68
Sept. 10	.25	.34	.39	.44	.54	.70	.92	1.22	1.52	1.80	2.12	2.22
Sept. 10	.25	.25	.27	.28	.31	.35	.42	.60	.78	1.18	1.35	1.35
Sept. 17	.28	.38	.40	.40	.40	.40	.44	.45	.47	.47	.47	.56

M Missing

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
FLORIDA (Cont'd.)												
Miami Airport (Cont'd.)												
Sept. 22	0.29	0.46	0.52	0.53	0.61	0.66	0.69	0.70	0.82	0.85	0.88	0.95
Sept. 23	.25	.33	.37	.38	.41	.47	.56	.66	.73	.84	.88	.92
Sept. 24	.30	.32	.33	.33	.33	.33	.33	.36	.36	.36	.36	.36
Sept. 28	.36	.50	.57	.61	.83	.97	1.09	1.17	1.25	1.25	1.25	1.25
Oct. 12	.28	.50	.75	1.00	1.45	1.85	2.15	2.20	2.20	2.20	2.20	2.20
Oct. 14	.30	.55	.85	1.03	1.07	1.28	1.29	1.30	1.30	1.30	1.30	1.30
Oct. 20	.30	.55	.80	1.00	1.30	1.33	1.34	1.38	1.44	1.44	1.44	1.44
Oct. 26	.15	.25	.33	.45	.65	.83	.90	1.03	1.10	1.15	1.17	1.18
Oct. 31	.40	.65	.72	.75	.78	.78	.88	1.23	1.33	1.47	1.47	1.47
Nov. 1	.40	.60	.72	.78	.87	1.09	1.10	1.10	1.11	1.15	1.19	1.20
Orlando Airport												
Jan. 30	.21	.40	.45	.48	.56	.65	.70	.75	.82	.87	.92	.93
Feb. 4	.25	.38	.43	.46	.50	.60	.68	.74	.81	.85	.93	.99
Feb. 5	.28	.50	.75	.82	.90	.93	.96	1.07	1.12	1.20	1.20	1.20
Feb. 25	.18	.24	.29	.40	.55	.66	.72	.73	.74	.75	.75	.75
Mar. 15	.42	.70	.85	.88	1.03	1.40	1.52	1.57	1.61	1.66	1.90	2.43
Mar. 17	.17	.30	.37	.40	.48	.52	.54	.60	.75	.82	.94	.99
Apr. 22	.23	.40	.50	.57	.72	1.08	1.22	1.23	1.24	1.25	1.25	1.26
June 2	.30	.34	.36	.36	.36	.36	.36	.37	.40	.40	.40	.40
June 6	.20	.32	.34	.36	.61	.64	.65	.69	.72	.73	.74	.74
June 17	.24	.39	.58	.64	.72	.82	.83	.84	.85	.86	.88	.88
June 24	.20	.31	.46	.53	.63	.68	.72	.75	.75	.75	.75	.75
June 25	.67	.82	1.17	1.38	1.61	1.78	1.98	2.00	2.02	2.05	2.05	2.05
June 28	.24	.45	.69	.81	1.14	1.29	1.39	1.43	1.44	1.46	1.55	1.61
July 7	.50	.85	.90	.92	.92	.92	.92	.92	.92	.92	.95	.95
July 9	.27	.43	.54	.65	.74	.78	.80	.80	.80	.80	.80	.80
July 15	.22	.42	.56	.70	.75	.77	.79	.81	.82	.84	.85	.87
July 16	.24	.44	.47	.50	.62	.80	.86	.95	1.00	1.00	1.00	1.05
July 18	.63	.78	1.02	1.55	1.72	1.98	2.19	2.25	2.25	2.25	2.25	2.26
July 23	.37	.62	.73	.74	.74	.74	.74	.74	.74	.74	.76	.77
July 25	.64	1.16	1.69	2.50	3.42	4.64	5.75	7.03	7.68	7.95	8.10	8.16
July 28	.19	.31	.36	.39	.40	.43	.45	.49	.51	.51	.51	.51
Aug. 11	.25	.34	.38	.43	.43	.45	.46	.47	.50	.50	.50	.50
Aug. 21	.27	.28	.29	.30	.41	.42	.43	.46	.49	.49	.50	.54
Sept. 7	.36	.65	.81	.95	1.06	1.24	1.75	2.35	2.41	2.43	2.45	2.46
Sept. 13	.26	.32	.35	.36	.40	.43	.43	.43	.43	.43	.43	.43
Oct. 8	.31	.61	.66	.70	.82	1.18	1.22	1.23	1.26	1.33	1.33	1.34
Pensacola												
Feb. 4	.45	.60	.67	.72	.77	.89	.97	1.03	1.08	1.16	1.21	1.24
Feb. 4	.38	.54	.60	.64	.72	.85	.92	1.02	1.09	1.12	1.17	1.22
Mar. 2	.15	.26	.34	.45	.48	.58	.71	.82	.89	.99	1.32	1.51
Mar. 16	.35	.55	.62	.63	.65	.67	.68	.68	.68	.68	.69	.69
Mar. 26	.20	.35	.45	.52	.56	.63	.75	.85	.87	.88	.88	.88
Mar. 30	.28	.41	.59	.68	.77	.78	.79	.80	.80	.90	1.01	1.02
Apr. 1	.30	.41	.49	.53	.59	.72	.86	.97	1.12	1.46	1.73	1.84
Apr. 3	.18	.32	.41	.48	.52	.60	.67	.81	.95	1.14	1.30	1.68
Apr. 4	.24	.31	.36	.37	.39	.41	.46	.49	.64	.68	.68	.68
May 7	.27	.54	.79	.84	.91	1.00	1.07	1.10	1.15	1.19	1.23	1.28
May 26	.21	.31	.40	.47	.59	.74	.79	.80	.81	.92	.98	1.02
May 26	.26	.49	.60	.64	.68	.71	.73	.73	.73	.73	.73	.73
June 2	.25	.38	.41	.41	.43	.44	.44	.44	.44	.44	.44	.44
June 17	.45	.49	.49	.49	.49	.49	.49	.66	.67	.67	.67	.67
June 21	.22	.30	.30	.30	.30	.30	.30	.30	.30	.30	.35	.35
July 5	.23	.38	.44	.49	.50	.52	.52	.52	.52	.54	.54	.54
July 7	.24	.34	.37	.54	.61	.63	.63	.63	.63	.63	.63	.63
July 11	.26	.50	.63	.76	.86	.93	.93	.95	1.03	1.04	1.05	1.05
July 30	.16	.28	.37	.43	.45	.46	.46	.46	.46	.46	.46	.46
Aug. 2	.23	.38	.43	.51	.59	.77	.82	.82	.82	.82	.83	.83
Aug. 3	.30	.53	.55	.58	.60	.60	.60	.60	.61	.61	.61	.61
Aug. 4	.19	.34	.46	.58	.63	.63	.63	.63	.63	.63	.63	.63
Aug. 12	.27	.40	.40	.47	.49	.50	.50	.51	.51	.51	.51	.61
Aug. 21	.37	.56	.77	.91	.96	.97	.98	.98	.98	.98	.98	1.22
Aug. 23	.39	.49	.63	.66	.67	.69	.69	.72	.73	.73	.73	.73
Aug. 23	.21	.35	.52	.61	.80	.93	.94	.94	.94	.94	.94	.96
Sept. 9	.20	.31	.40	.50	.61	.83	.93	1.12	1.39	1.44	1.69	1.81
Oct. 5	.20	.38	.54	.56	.56	.57	.66	.93	1.03	1.25	1.34	1.35
Oct. 6	.20	.30	.42	.50	.74	1.00	1.06	1.18	1.46	1.57	1.58	1.60
Oct. 30	.41	.70	.77	.82	.84	.86	.87	.88	.90	.93	.98	1.10
Nov. 23	.25	.41	.48	.53	.59	.76	.78	.78	.78	.78	.78	.78
Nov. 29	.20	.32	.38	.41	.44	.45	.45	.45	.45	.45	.45	.45
Tallahassee Airport												
Jan. 28	.23	.30	.30	.30	.30	.30	.31	.39	.40	.40	.41	.41
Feb. 4	.20	.30	.39	.45	.55	.66	.77	.85	.92	.97	1.03	1.07
Feb. 10	.22	.34	.42	.43	.43	.43	.43	.43	.43	.43	.43	.43
Feb. 13	.31	.44	.60	.67	.75	.83	.87	.92	1.01	1.02	1.03	1.06
Feb. 25	.25	.50	.66	.77	.95	1.17	1.57	1.75	1.81	1.89	1.99	2.04
Mar. 30	.25	.40	.47	.51	.52	.52	.56	.62	.68	.71	.79	.80
Apr. 2	.15	.25	.31	.44	.59	.70	.83	.88	.94	.98	1.09	1.48
Apr. 4	.20	.38	.47	.64	.80	1.04	1.17	1.19	1.19	1.19	1.21	1.39
Apr. 27	.24	.34	.39	.42	.52	.56	.58	.59	.59	.59	.59	.59
May 10	.27	.54	.69	.85	1.10	1.22	1.26	1.27	1.28	1.28	1.28	1.28
June 3	.24	.39	.46	.48	.50	.50	.50	.50	.50	.50	.50	.50
June 3	.38	.63	.76	.84	1.05	1.12	1.12	1.12	1.12	1.12	1.12	1.12
June 17	.58	1.11	1.31	1.36	1.42	1.47	1.48	1.85	1.96	2.00	2.06	2.06
June 18	.29	.48	.55	.60	.83	1.09	1.11	1.29	1.71	1.74	1.80	1.80
June 20	.23	.46	.59	.68	.74	.88	.92	.93	.94	.94	.94	.94
June 25	.40	.70	.86	1.01	1.11	1.12	1.14	1.14	1.14	1.14	1.14	1.14
July 10	.27	.52	.69	.80	1.00	1.10	1.11	1.12	1.12	1.12	1.12	1.22
July 16	.26	.38	.46	.62	.92	1.19	1.26	1.28	1.31	1.34	1.44	1.51
Aug. 8	.30	.59	.71	.72	.74	.75	.76	.76	.76	.76	.76	.76
Aug. 22	.30	.40	.41	.43	.44	.56	.56	.58	.65	.67	.68	.68
Sept. 15	.15	.30	.39	.54	.76	.81	1.09	1.14	1.15	1.18	1.23	1.55
Sept. 25	.23	.45	.54	.58	.62	.65	.71	.82	.84	.87	.91	1.02
Sept. 28	.20	.27	.36	.39	.42	.56	.67	.70	.75	.77	.77	.81
Sept. 28	.20	.35	.45	.50	.70	.90	.94	1.00	1.12	1.12	1.15	1.20
Oct. 6	.15	.22	.35	.41	.43	.45	.45	.46	.46	.47	.54	.55
Nov. 24	.27	.54	.73	.79	1.02	1.21	1.50	2.17	2.65	3.01	3.15	3.49
Dec. 30	.15	.22	.35	.44	.49	.50	.51	.51	.51	.51	.51	.51
Tampa Airport												
Feb. 5	.30	.40	.63	.64	.67	.73	.80	.82	.90	1.00	1.07	1.08
Mar. 3	.38	.52	.57	.65	.69	.72	.72	.74	.77	.77	.77	.77
Mar. 15	.35	.70	.93	1.05	1.42	1.60	1.88	2.03	2.06	2.08	2.08	2.09
Mar. 16	.30	.38	.33	.40	.46	.66	.69	.80	.80	.82	.85	.85
Mar. 16	.35	.65	.77	.78	1.10	1.41	1.45	1.55	1.69	1.85	1.86	1.89
Mar. 17	.28	.42	.55	.57	.63	.81	.83	.85	1.25	1.31	1.50	1.87
Mar. 18	.24	.35	.36	.43	.48	.53	.53	.55	.58	.60	.61	.61
Apr. 4	.22	.23	.38	.40	.43	.50	.52	.54	.57	.61	.67	.69
May 8	.24	.37	.52	.59	.63	.69	.71	.74	.74	.74	.74	.74
June 20	.38	.73	.95	1.14	1.54	2.00	2.22	2.22	2.22	2.22	2.22	2.22
June 21	.32	.35	.36	.36	.36	.36	.36	.36	.36	.36	.36	.36

EXCESSIVE SHORT DURATION RAINFALL

YEAR 1960

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
FLORIDA (Cont'd.)												
Tampa Airport (Cont'd.)												
June 27	0.30	.60	0.62	0.64	0.72	0.78	0.81	0.82	0.91	0.92	0.92	0.94
July 22	.50	.80	.85	.90	.95	1.02	1.06	1.08	1.08	1.09	1.10	1.10
July 25	.31	.40	.49	.50	.50	.50	.50	.50	.50	.50	.50	.50
July 26	.25	.32	.37	.50	.70	.72	.72	.72	.72	.72	.75	1.13
July 26	.16	.20	.32	.38	.45	.62	.88	1.00	1.06	1.09	1.15	1.18
July 28	.25	.33	.34	.40	.47	.60	.77	.83	.86	1.17	1.21	1.21
July 28	.27	.30	.37	.41	.50	.52	.80	.81	.82	1.16	1.20	1.37
July 29	.50	.65	1.05	1.27	1.46	2.20	2.38	2.63	2.83	2.93	3.27	3.55
July 29	.31	.33	.38	.45	.52	.87	.99	1.02	1.07	1.07	1.14	1.40
July 30	.23	.41	.43	.45	.48	.48	.55	.58	.76	.80	.82	.86
July 30	.22	.37	.42	.43	.47	.47	.47	.47	.47	.48	.48	.53
July 31	.28	.40	.41	.42	.44	.48	.51	.59	.66	.71	.88	.98
Aug. 4	.25	.35	.40	.50	.60	.65	.67	.67	.67	.67	.67	.67
Aug. 7	.20	.30	.40	.45	.46	.46	.46	.46	.46	.46	.46	.46
Aug. 26	.25	.33	.36	.36	.37	.38	.38	.39	.40	.41	.45	.48
Aug. 30	.45	.65	.90	1.10	1.25	1.27	1.29	1.30	1.31	1.31	1.32	1.32
Aug. 31	.68	1.18	1.40	2.03	2.31	2.87	3.00	3.01	3.02	3.02	3.02	3.02
Sept. 2	.35	.47	.55	.80	.91	.97	1.01	1.06	1.10	1.12	1.25	1.29
Sept. 7	.22	.31	.32	.33	.36	.52	.53	.53	.53	.53	.53	.60
Sept 12	.25	.45	.60	.63	.65	.75	.85	.90	1.03	1.05	1.05	1.05
West Palm Beach AP												
Feb. 5	.40	.75	1.04	1.16	1.38	1.42	1.44	1.45	1.45	1.47	1.47	1.47
Apr. 22	.20	.29	.43	.55	.68	.80	1.01	1.05	1.05	1.05	1.24	1.25
Apr. 25	.22	.40	.56	.70	.73	.94	1.26	1.37	1.39	1.40	1.48	1.54
May 27	.30	.47	.61	.71	.79	.80	.81	.82	.83	.84	.84	.84
June 4	.19	.35	.39	.51	.76	.88	.88	.88	.88	.88	.88	.88
June 19	.29	.39	.48	.63	.72	.78	.80	.82	.87	.89	.94	.98
June 20	.36	.58	.63	.71	.93	1.35	1.59	2.21	2.31	2.38	2.40	2.40
July 25	.20	.33	.38	.47	.55	.63	.68	.70	.70	.70	.70	.70
July 26	.28	.35	.48	.55	.86	.88	.89	.91	.92	.92	.92	.92
July 31	.33	.53	.64	.68	.70	.85	1.00	1.01	1.05	1.30	1.60	1.75
Aug. 14	.22	.34	.40	.46	.47	.48	.49	.51	.53	.58	.58	.59
Aug. 14	.19	.34	.35	.36	.37	.39	.40	.40	.40	.40	.40	.40
Aug. 16	.30	.32	.37	.38	.39	.40	.40	.40	.40	.40	.40	.40
Aug. 24	.28	.33	.43	.47	.68	.91	1.18	1.28	1.30	1.32	1.32	1.32
Sept. 3	.30	.50	.65	.71	.73	.85	1.12	1.12	1.12	1.12	1.12	1.12
Sept. 13	.18	.35	.37	.38	.39	.63	.76	.77	.77	.77	1.10	1.17
Sept. 17	.48	.73	.93	1.23	1.66	2.23	2.75	3.66	4.13	4.27	4.56	4.68
Sept. 17	.20	.35	.36	.36	.37	.37	.39	.40	.40	.41	.41	.41
Sept. 18	.25	.37	.54	.68	.83	.87	.89	.91	.92	.93	.94	.94
Sept. 25	.30	.55	.80	.92	1.08	1.29	1.50	1.72	1.82	1.92	1.97	2.02
Sept. 27	.25	.36	.40	.42	.44	.47	.47	.47	.48	.54	.55	.55
Sept. 28	.20	.34	.38	.47	.62	.71	.76	.88	.91	.93	.99	1.03
Oct. 7	.30	.45	.56	.58	.59	.74	.75	.80	.80	.80	.80	.80
Oct. 9	.20	.25	.31	.41	.47	.49	.50	.51	.51	.51	.51	.51
Oct. 14	.42	.73	1.02	1.30	1.59	1.74	1.76	1.77	1.77	1.77	1.77	1.77
GEORGIA												
Athens Airport												
July 10	.35	.60	.80	1.05	1.48	1.88	2.25	2.50	2.55	2.62	2.62	2.62
Aug. 13	.20	.34	.45	.45	.45	.45	.45	.47	.47	.47	.47	.47
Aug. 15	.45	.75	1.04	1.25	1.60	1.97	2.06	2.07	2.07	2.07	2.07	2.07
Aug. 22	.40	.67	.75	.80	.80	.80	.80	.80	.81	.81	1.13	1.13
Sept. 1	.45	.85	1.14	1.32	1.49	1.61	1.63	1.63	1.63	1.63	1.63	1.63
Sept. 16	.50	.90	1.04	1.10	1.20	1.21	1.21	1.22	1.26	1.26	1.27	1.27
Atlanta Airport												
Feb. 10	.25	.39	.41	.59	.62	.63	.63	.63	.63	.63	.65	.76
Mar. 29	.25	.25	.25	.26	.28	.30	.33	.35	.38	.40	.43	.45
Apr. 21	.25	.48	.49	.49	.49	.53	.54	.55	.56	.58	.60	.60
May 7	.33	.37	.39	.44	.51	.54	.58	.63	.68	.75	.90	.90
June 4	.20	.31	.34	.37	.37	.37	.46	.47	.47	.47	.47	.47
July 6	.29	.41	.50	.57	.59	.61	.90	.94	.96	.97	.97	.97
July 10	.33	.50	.50	.51	.54	.61	.62	.62	.62	.62	.74	.74
Aug. 9	.59	.90	1.13	1.55	1.83	1.91	2.04	2.06	2.12	2.29	2.30	2.32
Aug. 15	.50	.66	.85	.98	1.12	1.19	1.20	1.20	1.20	1.20	1.20	1.20
Oct. 6	.50	.53	.54	.55	.56	.57	.57	.57	.57	.57	.57	.57
Augusta Airport												
Mar. 29	.33	.62	.91	1.01	1.17	1.36	1.64	1.69	1.76	1.87	2.05	2.15
May 26	.16	.26	.42	.46	.65	.69	.72	.79	.86	.92	.93	.93
June 2	.38	.72	1.06	1.38	1.87	2.18	2.23	2.25	2.26	2.29	2.33	2.38
June 21	.16	.28	.37	.43	.48	.55	.57	.58	.61	.67	.73	.76
July 2	.43	.63	.74	.79	.92	.95	.95	.95	.95	.95	.95	.95
July 5	.22	.42	.58	.64	.88	.92	.94	.95	1.00	1.02	1.02	1.02
July 7	.18	.34	.42	.48	.61	.81	.88	.97	1.06	1.07	1.07	1.07
July 22	.36	.64	.82	1.03	1.21	1.23	1.24	1.25	1.25	1.25	1.25	1.25
July 28	.35	.69	.93	.96	1.05	1.05	1.05	1.05	1.05	1.24	1.69	1.80
July 31	.13	.25	.35	.38	.51	.61	.73	.76	.76	.76	.76	.76
Aug. 15	.19	.37	.51	.58	.61	.62	.62	.62	.67	.69	.69	.69
Columbus Airport												
Mar. 29	.26	.40	.54	.60	.68	1.10	1.33	1.39	1.47	1.63	1.87	1.92
Mar. 30	.40	.57	.74	.77	.80	.81	.85	.86	1.08	1.08	1.08	1.08
Apr. 18	.27	.31	.35	.45	.48	.51	.54	.59	.61	.68	.74	.74
May 7	.22	.29	.38	.40	.69	.72	.74	.80	.86	.90	.91	.94
June 14	.30	.45	.47	.47	.47	.55	.57	.57	.57	.57	.57	.57
July 24	.35	.70	.90	1.18	1.35	1.63	1.75	1.79	1.81	1.81	1.82	1.83
Aug. 5	.26	.35	.45	.48	.55	.67	.69	.70	.71	.72	.72	.72
Aug. 9	.25	.45	.60	.64	.68	.73	.75	.76	.77	.77	.80	.90
Aug. 14	.27	.31	.35	.37	.37	.38	.43	.45	.47	.48	.55	.56
Aug. 22	.25	.45	.47	.49	.51	.52	.53	.53	.53	.53	.53	.55
Aug. 24	.25	.32	.37	.39	.40	.40	.40	.40	.40	.40	.40	.40
Sept. 28	.15	.28	.43	.48	.66	.73	.74	.74	.74	.74	.74	.74
Macon Airport												
Feb. 10	.22	.34	.46	.62	.66	.84	1.18	1.27	1.34	1.43	1.56	1.72
Apr. 2	.18	.34	.35	.35	.36	.37	.37	.50	.57	.64	.59	.68
May 7	.23	.32	.45	.58	.66	.77	.79	.80	.84	.87	.90	.90
June 25	.54	.98	1.37	1.73	2.31	2.55	2.65	2.74	2.75	2.77	2.85	2.85
July 4	.25	.44	.61	.79	.80	.85	1.03	1.10	1.11	1.11	1.11	1.11
July 24	.24	.39	.54	.66	.90	1.10	1.21	1.28	1.29	1.30	1.31	1.32
Aug. 5	.25	.40	.55	.70	.80	.90	.91	.93	.95	.95	.95	.95
Aug. 9	.36	.69	.91	1.02	1.11	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Sept. 8	.25	.48	.53	.53	.53	.53	.53	.53	.53	.53	.53	.53
Sept. 28	.44	.80	.97	1.06	1.13	1.13	1.18	1.25	1.25	1.32	1.32	1.32
Rome Airport												
June 8	.25	.38	.44	.50	.54	.59	.60	.71	.73	.73	.75	.75
July 19	.22	.35	.39	.41	.43	.43	.43	.43	.43	.43	.43	.43
Aug. 12	.23	.40	.63	.71	.84	.90	.90	.90	.90	.90	.90	1.14
Sept. 27	M	M	M	M	M	M	(1.15)	M	M	(2.13)	M	(2.58)

M Missing
( ) Estimated Data

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
GEORGIA (Cont'd.)												
Rome Airport (Cont'd.)												
Oct. 9	0.37	0.42	0.44	0.45	0.53	0.58	0.60	0.60	0.60	0.60	0.60	0.60
Savannah Airport												
Mar. 30	.21	.31	.34	.35	.36	.38	.43	.52	.60	.68	.70	.70
Apr. 5	.18	.30	.37	.39	.44	.49	.50	.51	.51	.53	.61	.61
May 2	.62	.92	1.20	1.29	1.39	1.41	1.44	1.45	1.46	1.48	1.65	1.65
June 7	.26	.42	.53	.62	.66	.74	.78	.81	.83	.84	.84	.84
June 21	.44	.68	.97	1.17	1.22	1.25	1.28	1.38	1.44	1.47	1.51	1.51
July 6	.31	.51	.68	.78	.87	1.17	1.40	1.46	1.57	1.61	1.67	1.73
July 7	.18	.28	.35	.38	.54	.74	.96	1.06	1.12	1.16	1.25	1.34
July 14	.34	.67	.82	.92	1.34	1.59	1.61	1.61	1.61	1.61	1.61	1.61
July 15	.25	.44	.59	.67	.81	1.07	1.15	1.22	1.63	1.73	2.07	2.35
July 29	.19	.28	.45	.55	.60	.75	.85	.92	.93	.93	1.05	1.09
July 31	.25	.46	.62	.82	1.10	1.42	1.80	2.05	2.24	2.36	2.44	2.47
Valdosta Airport												
Feb. 13	.18	.24	.41	.46	.62	.72	.93	.97	.98	1.00	1.06	1.14
Feb. 23	.37	.59	.75	.93	1.08	1.25	1.44	1.51	1.59	1.65	1.70	1.73
Feb. 25	.28	.37	.45	.53	.58	.67	.75	.84	.99	1.08	1.23	1.43
Mar. 30 †	.15	.24	.34	.47	.63	.82	.94	.95	.96	.98	.98	.98
Apr. 2	.30	.44	.65	.73	.80	.87	.99	1.02	1.10	1.14	1.26	1.34
Apr. 3	.21	.35	.42	.48	.53	.55	.55	.59	.63	.66	.66	.66
Apr. 4	.24	.31	.39	.41	.42	.42	.42	.42	.48	.48	.48	.49
May 7	.32	.56	.83	.88	.96	1.20	1.32	1.32	1.32	1.32	1.32	1.32
July 3	.25	.46	.65	.79	1.03	1.25	1.40	1.43	1.44	1.44	1.46	1.47
July 7	.24	.43	.63	.80	1.24	1.67	1.88	2.02	2.34	2.39	2.41	2.41
July 15	.19	.33	.38	.39	.52	.60	.61	.61	.61	.61	.61	.61
July 16	.32	.59	.83	1.01	1.36	1.58	1.61	1.66	1.67	1.70	1.70	1.73
July 25	.23	.33	.48	.63	.67	.69	.69	.69	.69	.69	.69	.69
Aug. 22	.24	.42	.44	.45	.47	.48	.54	.62	.62	.65	.71	.71
Aug. 25	.23	.32	.38	.40	.40	.40	.40	.40	.40	.40	.40	.40
Aug. 30	.25	.30	.39	.42	.43	.55	.55	.56	.58	.58	.58	.58
Oct. 6	.37	.57	.71	.73	.91	.98	.99	.99	.99	.99	1.07	1.13
HAWAII												
Hilo Airport												
Jan. 13	.20	.37	.44	.51	.62	.70	.88	.99	1.06	1.10	1.37	1.40
Jan. 15	.22	.41	.62	.82	1.17	1.72	2.17	2.92	3.76	4.01	4.36	4.76
Feb. 13	.18	.26	.38	.43	.50	.52	.52	.52	.53	.54	.59	.64
Feb. 16	.30	.57	.72	.79	.85	1.28	1.43	1.73	1.93	2.16	2.87	3.01
May 10	.15	.30	.35	.40	.54	.62	.73	1.02	1.10	1.31	1.53	1.60
July 26	.23	.36	.39	.43	.50	.51	.52	.52	.52	.52	.52	.52
Aug. 30	.16	.30	.43	.54	.63	.77	.82	.91	1.00	1.06	1.62	1.75
Sept. 27	.25	.42	.51	.65	.94	1.39	1.80	2.15	2.51	2.70	2.91	3.34
Oct. 14	.37	.64	.83	1.03	1.47	1.60	1.65	1.70	1.75	1.77	1.80	1.85
Oct. 17	.15	.25	.30	.37	.49	.66	.80	.96	1.22	1.30	1.49	1.72
Nov. 11	.31	.53	.69	.79	.88	.92	1.05	1.11	1.11	1.11	1.11	1.38
Nov. 11	.24	.32	.38	.44	.53	.53	.74	.88	.89	1.25	1.38	1.40
Dec. 28	.28	.38	.41	.43	.50	.52	.54	.54	.54	.54	.54	.54
Lihue Airport												
Feb. 19	.32	.59	.83	1.03	1.37	1.51	1.63	1.71	1.73	1.74	1.74	1.74
Mar. 2	.23	.38	.51	.61	.71	.92	.99	1.08	1.40	1.51	1.63	1.89
Mar. 7	.21	.38	.45	.53	.61	.93	.97	1.01	1.35	1.62	1.79	1.79
May 12	.15	.25	.31	.45	.57	.67	.72	.75	.77	.78	.78	.79
May 13	.19	.30	.34	.35	.35	.36	.36	.36	.36	.36	.36	.40
Sept. 30	.33	.54	.65	.74	.79	.94	1.03	1.27	1.33	1.61	1.79	1.90
Oct. 2	.25	.38	.42	.45	.46	.51	.64	.71	.72	.72	.75	.82
Oct. 17	.20	.32	.45	.56	.82	1.16	1.31	1.39	1.44	1.51	1.58	1.66
Dec. 4	.42	.76	1.08	1.27	1.69	2.18	2.56	2.85	2.97	3.06	3.21	3.43
Dec. 31	.26	.47	.57	.69	1.00	1.31	1.36	1.38	1.39	1.41	1.48	1.49
IDAHO												
Boise Airport												
July 30	.16	.24	.34	.42	.52	.69	.78	.85	.92	.93	.94	.94
Pocatello Airport												
June 9	.20	.40	.54	.66	.78	.86	.86	.86	.87	.87	.87	.87
ILLINOIS												
Cairo												
May 20	.25	.34	.41	.42	.43	.44	.44	.44	.47	.55	.57	.60
June 2	.51	.89	1.18	1.36	1.72	1.96	1.98	2.04	2.04	2.05	2.05	2.05
June 23	.28	.28	.28	.28	.29	.29	.29	.29	.29	.29	.29	.29
June 27	.14	.28	.40	.52	.66	.81	.93	1.07	1.23	1.34	1.47	1.62
Chicago Airport												
June 30	.23	.32	.35	.35	.36	.38	.39	.40	.40	.40	.40	.40
July 2	.33	.61	.69	.91	1.37	1.80	1.92	2.02	2.05	2.05	2.05	2.05
July 22	.21	.35	.50	.63	.67	.67	.67	.67	.67	.67	.67	.67
Sept. 18	.24	.41	.48	.53	.55	.56	.61	.70	.79	.82	.90	.98
Moline Airport												
Apr. 16	.16	.31	.39	.40	.44	.50	.56	.66	.72	.72	.73	.73
June 4	.22	.32	.44	.48	.52	.64	.67	.80	.87	.87	.87	.93
June 11	.18	.28	.38	.46	.74	.92	1.23	1.47	1.51	1.60	1.75	1.78
July 25	.15	.29	.38	.42	.46	.51	.56	.79	.90	.99	1.24	1.26
July 26	.23	.44	.45	.47	.48	.49	.49	.49	.49	.49	.49	.49
Aug. 3	.22	.38	.42	.43	.45	.45	.45	.47	.47	.48	.48	.48
Sept. 15	.20	.25	.30	.35	.43	.68	.79	.92	1.08	1.16	1.26	1.38
Sept 24	.21	.32	.53	.59	.60	.60	.61	.87	.90	.90	.90	.95
Oct. 13	.27	.46	.48	.54	.57	.58	.68	.68	.68	.70	.84	1.08
Peoria Airport												
Apr. 16	.12	.22	.34	.38	.58	.68	.71	.71	.71	.72	.72	.72
May 16	.28	.32	.48	.50	.52	.78	.88	.90	.90	.90	.91	1.10
May 24	.28	.52	.60	.64	.67	.72	.79	.86	.92	.93	.94	.94
May 25	.75	1.04	1.23	1.38	1.46	1.55	1.57	1.59	1.62	1.67	1.69	1.69
June 4	.43	.47	.52	.56	.61	.65	.66	.69	.71	.78	.83	.88
June 12	.22	.34	.40	.46	.67	.75	.80	.84	.86	.89	.89	.90
July 23	.21	.40	.56	.69	.84	.88	.88	.88	.88	.88	.88	.88
July 26	.36	.48	.53	.54	.54	.54	.54	.54	.54	.54	.54	.54
Aug. 3	.22	.42	.58	.75	1.02	1.54	1.80	1.88	1.88	1.88	1.88	1.88
Aug. 18	.25	.46	.62	.66	.86	1.00	1.06	1.08	1.13	1.15	1.17	1.17
Aug. 20	.18	.30	.36	.40	.46	.56	.77	.83	.83	.83	.83	.89
Sept. 18	.20	.35	.47	.58	.79	.80	.80	.81	.84	.84	.86	.86
Sept. 24	.24	.47	.58	.63	.64	.64	.64	.65	.65	.65	.66	.96
Nov. 15	.19	.33	.44	.50	.55	.57	.60	.63	.65	.65	.66	.66
Rockford Airport												
Apr. 16	.22	.38	.44	.52	.63	.69	.70	.74	.82	.94	1.15	1.35

† March 31 is shown at end of table.

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
ILLINOIS (Cont'd.)												
Rockford Airport (Cont'd)												
May 6	0.15	0.27	0.40	0.43	0.52	0.58	0.61	0.67	0.72	0.77	0.98	1.15
June 30	.30	.58	.87	.90	.92	.94	.96	.97	.97	.97	.97	.99
July 2	.45	.63	.84	.97	1.06	1.08	1.09	1.09	1.09	1.09	1.11	1.12
July 18	.38	.58	.72	.78	.83	.84	.86	.86	.86	.86	.86	.86
Aug. 18	.35	.54	.56	.57	1.10	1.11	1.11	1.11	1.19	1.21	1.29	1.45
Aug. 19	.18	.30	.36	.40	.56	.65	.66	.69	.71	.74	.75	.75
Aug. 20	.31	.33	.33	.33	.34	.34	.34	.34	.34	.34	.35	.37
Sept. 11	.38	.54	.57	.59	.63	.63	.63	.63	.63	.63	.63	.63
Sept. 18	.36	.63	.97	1.20	1.47	1.68	1.83	1.85	2.00	2.32	2.40	2.47
Oct. 13	.17	.28	.36	.39	.57	.62	.70	.93	1.18	1.28	1.30	1.34
Springfield Airport												
Mar. 29	.23	.34	.40	.48	.61	.71	.96	1.11	1.29	1.36	1.52	1.61
May 24	.25	.34	.37	.40	.44	.44	.44	.44	.44	.44	.44	.44
May 25	.24	.38	.41	.42	.43	.45	.47	.49	.50	.51	.51	.51
June 5	.18	.30	.37	.41	.46	.59	.67	.68	.68	.68	.68	.68
June 11	.68	1.08	1.20	1.35	1.56	1.89	1.90	1.90	1.90	1.90	1.90	1.90
June 20	.40	.70	1.01	1.05	1.31	1.41	1.47	1.53	1.55	1.71	1.77	1.87
June 23	.27	.47	.52	.57	.67	.78	.92	1.11	1.13	1.26	1.31	1.52
July 25	.26	.52	.65	.75	.77	.79	.79	.79	.79	.79	.79	.79
Aug. 6	.17	.34	.50	.58	.62	.63	.66	.68	.75	.76	.77	.78
Aug. 18	.21	.31	.33	.34	.34	.34	.34	.34	.34	.34	.34	.34
Sept. 24	.20	.36	.51	.60	.68	.72	.72	.72	.73	.73	.73	.73
Nov. 15	.29	.34	.41	.49	.74	.97	1.03	1.10	1.17	1.28	1.41	1.49
INDIANA												
Evansville Airport												
Feb. 9	.14	.25	.33	.44	.55	.62	.64	.69	.71	.71	.71	.71
May 24	.22	.36	.47	.56	.65	.72	.76	.82	.83	.93	.98	1.04
June 13	.19	.25	.37	.37	.37	.37	.37	.37	.37	.39	.65	.67
June 23	.52	.78	.92	1.04	1.55	1.87	2.60	2.79	2.88	2.93	2.94	2.97
June 28	.52	.72	.82	.92	1.07	1.13	1.23	1.23	1.26	1.30	1.33	1.33
July 3	.26	.34	.38	.39	.39	.40	.45	.45	.45	.45	.45	.45
July 25	.20	.29	.35	.41	.47	.51	.52	.56	.59	.60	.62	.62
Aug. 4	.28	.30	.35	.58	.70	.83	.91	1.01	1.08	1.09	1.12	1.14
Fort Wayne Airport												
June 5	.28	.54	.66	.68	.73	.74	.76	.77	.77	.79	.81	.84
June 11	.27	.34	.41	.43	.44	.44	.44	.44	.44	.44	.46	.67
June 22	.29	.50	.70	.90	1.38	1.39	1.40	1.42	1.42	1.42	1.42	1.42
July 25	.36	.70	.86	.87	.89	.89	.89	.89	.89	.89	.89	.89
Aug. 3	.16	.24	.32	.42	.46	.66	.69	.69	.69	.69	.69	.69
Aug. 14	.20	.30	.34	.38	.42	.46	.46	.47	.47	.47	.47	.47
Oct. 5	.16	.26	.30	.46	.47	.47	.47	.47	.47	.47	.47	.47
Indianapolis AP												
June 22	.25	.34	.48	.66	.70	.72	.72	.75	.78	.78	.78	.78
June 23	.32	.50	.62	.66	.74	.89	1.00	1.09	1.20	1.50	1.78	1.96
July 24	.28	.44	.58	.63	.66	.66	.66	.66	.66	.66	.66	.66
Aug. 21	.25	.43	.44	.44	.44	.44	.44	.44	.44	.44	.44	.44
Sept. 8	.22	.38	.57	.62	.73	.73	.75	.76	.76	.76	.76	.76
Sept. 9	.29	.44	.46	.46	.48	.52	.54	.57	.58	.58	.58	.58
Sept. 19	.28	.35	.37	.44	.46	.46	.54	.71	.91	1.05	1.06	1.06
South Bend AP												
June 13	.19	.31	.41	.46	.64	.84	.97	1.05	1.15	1.28	1.52	1.56
June 15	.29	.38	.45	.47	.49	.49	.49	.49	.49	.49	.49	.49
June 16	.16	.31	.37	.48	.52	.54	.54	.64	.65	.66	.72	.73
July 2	.15	.26	.31	.39	.61	.67	.73	.78	.81	.82	.99	1.05
Aug. 3	.23	.40	.55	.65	.80	.90	.99	1.00	1.00	1.00	1.00	1.00
Aug. 3	.62	.90	1.07	1.18	1.25	1.30	1.31	1.31	1.31	1.31	1.31	1.31
Sept. 9	.23	.36	.37	.37	.40	.70	.75	.75	.75	.75	.75	.75
Sept. 19	.50	.78	.87	.90	1.14	1.29	1.37	1.42	1.47	1.53	1.68	1.90
Oct. 14	.18	.30	.42	.48	.61	.62	.64	.65	1.02	1.13	1.25	1.30
IOWA												
Burlington AP												
Mar. 29	.33	.42	.44	.45	.48	.78	.78	.78	.79	.79	.79	.79
Apr. 16	.24	.44	.64	.67	.69	.70	.73	.75	.79	.81	.81	.81
Apr. 20	.30	.40	.55	.58	.61	.65	.69	.74	.76	.83	.83	.84
June 1	.31	.41	.52	.59	.66	.72	.74	.75	.75	.75	.75	.75
June 10	.30	.50	.62	.67	.68	.68	.68	.68	.68	.68	.68	.68
June 11	.65	1.05	1.60	1.80	1.97	2.12	2.21	2.24	2.26	2.32	2.38	2.38
July 25	.35	.46	.51	.60	.73	.91	.99	1.09	1.25	1.30	1.31	1.33
Aug. 6	.22	.35	.47	.52	.70	.92	1.21	1.40	1.60	1.88	1.98	2.00
Sept. 18	.35	.50	.65	.68	.70	.75	.78	.79	.79	.79	.79	.79
Des Moines AP												
May 5	.18	.32	.50	.56	.65	.76	.81	.87	.92	.96	.96	.96
May 24	.18	.33	.42	.46	.49	.51	.51	.51	.51	.51	.52	.52
May 25	.26	.39	.44	.56	.66	.80	.98	1.24	1.60	1.67	1.99	1.99
June 18	.25	.34	.36	.41	.44	.44	.44	.46	.46	.46	.46	.46
July 11	.16	.31	.34	.35	.37	.38	.38	.39	.40	.41	.42	.42
Aug. 6	.40	.68	1.00	1.15	1.38	1.51	1.56	1.63	1.68	1.68	1.68	1.68
Aug. 15	.19	.31	.39	.47	.60	.81	.82	.82	.82	.82	.82	.82
Aug. 24	.28	.36	.40	.43	.45	.47	.47	.48	.48	.48	.48	.48
Aug. 25	.16	.32	.38	.40	.51	.52	.71	.73	.73	.73	.73	.73
Aug. 29	.24	.37	.41	.47	.63	.68	.68	.81	.84	.88	.97	1.11
Dubuque Airport												
Apr. 16	.26	.43	.48	.50	.54	.57	.59	.66	.72	.73	.73	.80
May 5-6	.35	.55	.70	.74	.80	1.02	1.12	1.15	1.16	1.18	1.20	1.21
July 2	.17	.33	.35	.35	.36	.37	.37	.37	.37	.37	.37	.37
Aug. 28	.28	.45	.56	.61	.66	.67	.81	.83	.90	.92	.93	.95
Sept. 18	.37	.72	.94	.94	.94	.94	.94	.94	.94	.94	1.02	1.03
Sept. 23	.38	.57	.65	.67	.69	.69	.69	.69	.69	.73	.79	.80
Nov. 15	.30	.42	.52	.55	.55	.55	.55	.70	.80	.80	.81	.84
Sioux City AP												
July 12	.34	.54	.77	.96	1.42	1.54	1.58	1.62	1.65	1.72	1.82	1.87
July 12	.18	.33	.47	.55	.60	.61	.62	.63	.65	.66	.68	.68
Aug. 27	.22	.38	.50	.56	.70	.83	.86	.87	.90	1.00	1.10	1.16
Aug. 28	.40	.43	.45	.47	.66	.72	1.00	1.07	1.08	1.10	1.18	1.19
KANSAS												
Concordia												
May 4	.22	.35	.45	.52	.84	1.04	1.06	1.19	1.22	1.28	1.31	1.40
June 15	.38	.60	.75	.80	1.05	1.22	1.25	1.25	1.26	1.27	1.30	1.30
Aug. 8	.32	.58	.64	.65	.66	.75	1.02	1.04	1.04	1.04	1.04	1.04
Aug. 28	.40	.71	.92	1.17	1.46	1.90	2.10	2.13	2.14	2.18	2.19	2.20
KANSAS (Cont'd.)												
Dodge City AP												
Apr. 24	0.15	0.29	0.36	0.44	0.50	0.51	0.51	0.51	0.51	0.51	0.51	0.51
May 5	.36	.50	.58	.64	.66	.68	.70	.71	.72	.73	.73	.73
June 5	.18	.28	.38	[illegible]	.52	.60	.74	.96	1.03	1.03	1.04	1.04
Goodland Airport												
May 4	.15	.25	.32	.40	.46	.50	.54	.54	.54	.54	.54	.54
June 10	.26	.35	.50	.62	.66	.77	.85	.87	.88	.90	1.01	1.05
Topeka Airport												
June 11	.26	.40	.41	.41	.41	.45	.46	.46	.46	.47	.62	—
June 11	.24	.30	.30	.31	.32	.45	.49	.55	.58	.69	.75	.75
July 8	.22	.30	.40	.45	.46	.46	.46	.46	.46	.47	.47	.47
July 12	.16	.32	.38	.48	.56	.60	.62	.66	.72	.72	.82	.94
Aug. 17	.26	.38	.47	.52	.60	.68	.78	.97	1.37	1.47	1.55	1.60
Wichita Airport												
Apr. 13	.26	.44	.56	.73	.79	.80	.80	.82	.83	.84	.84	.84
May 25	.14	.27	.35	.38	.46	.46	.47	.47	.52	.54	.54	.58
June 5	.56	.78	.81	.82	.85	.86	.86	.86	.87	.88	.88	.88
June 12	.32	.50	.53	.62	.63	.82	1.03	1.41	1.46	1.51	1.62	1.69
June 20	.19	.33	.46	.60	.78	.84	1.02	1.08	1.16	1.18	1.18	1.18
KENTUCKY												
Lexington Airport												
May 24	.30	.52	.53	.56	.58	.64	.69	.75	.79	.83	.88	.89
May 26	.48	.82	.94	1.10	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
June 21	.20	.31	.33	.35	.36	.37	.38	.40	.43	.44	.44	.46
June 22	.22	.40	.44	.46	.54	.88	.96	.99	1.02	1.02	1.02	1.32
June 22	.38	.63	.66	.68	.82	.95	1.08	1.08	1.10	1.10	1.66	1.85
June 23	.30	.58	.72	.85	1.00	1.40	1.54	1.56	1.60	1.84	1.94	1.96
June 23	.20	.30	.34	.42	.50	.66	.78	.92	1.16	1.24	1.30	1.37
July 1	.32	.38	.41	.42	.49	.50	.51	.51	.52	.53	.54	.55
July 3	.28	.38	.42	.44	.45	.45	.45	.46	.47	.48	.48	.48
Aug. 6	.32	.48	.68	.82	.86	.93	.96	.98	.99	.99	1.01	1.01
Aug. 18	.24	.31	.42	.54	.61	.69	.70	.73	.74	.74	.74	.74
Aug. 4	.42	.66	.68	.73	.84	.86	.87	.87	.87	.87	.87	.99
Louisville Airport												
May 20	.23	.35	.56	.67	.74	.78	.79	.88	.92	.94	1.17	1.20
May 27	.12	.24	.36	.46	.56	.65	.69	.72	.77	.79	.81	.83
June 2	.26	.51	.59	.61	.61	.62	.62	.62	.62	.62	.62	.62
June 12	.14	.26	.35	.40	.48	.48	.48	.48	.48	.48	.48	.48
June 23	.46	.78	.86	1.14	1.31	1.91	1.91	2.01	2.02	2.05	2.06	2.06
June 23	.39	.65	.70	.74	1.03	1.34	2.00	2.10	2.65	2.79	2.85	2.89
June 24	.22	.38	.50	.59	.63	.70	.80	.83	.84	.84	.84	.84
June 28	.19	.31	.37	.38	.43	.54	.59	.68	.84	.88	1.06	1.13
July 3	.39	.57	.68	.86	1.10	1.12	1.13	1.14	1.15	1.15	1.15	1.15
Aug. 15	.23	.37	.37	.37	.37	.58	.61	.61	.61	.61	.61	.61
Sept. 10	.20	.34	.46	.54	.62	.75	.80	.85	.89	.90	.90	.97
LOUISIANA												
Baton Rouge AP												
Jan. 17	.39	.46	.53	.57	.64	.68	.90	1.12	1.25	1.35	1.43	1.45
Feb. 3	.25	.33	.37	.42	.50	.57	.66	.74	.79	.82	.87	.87
May 5	.30	.56	.75	.82	.89	.93	.95	1.12	1.44	1.58	1.63	1.65
May 6	.30	.50	.65	.75	.95	1.20	1.82	1.93	1.96	1.98	1.99	1.99
July 13	.40	.80	.96	1.00	1.13	1.24	1.25	1.25	1.25	1.25	1.25	1.25
July 14	.25	.40	.50	.62	.74	.98	1.00	1.00	1.00	1.00	1.00	1.00
July 17	.40	.75	1.05	1.18	1.42	1.76	1.77	1.77	1.77	1.77	1.77	1.77
July 19	.40	.75	1.00	1.06	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Aug. 8	.18	.30	.39	.39	.39	.39	.39	.39	.39	.39	.39	.39
Aug. 11	.25	.40	.46	.56	.59	.72	.76	.79	.82	.86	.90	.94
Aug. 13	.28	.48	.58	.60	.65	.68	.73	.75	.82	.87	.91	.93
Aug. 14	.47	.82	.98	1.28	1.45	1.52	1.54	1.55	1.56	1.58	1.63	1.65
Aug. 16	.25	.42	.57	.70	.80	.87	.90	.91	.91	.93	.93	.93
Aug. 20	.45	.70	.95	.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lake Charles AP												
Jan. 17	.25	.40	.45	.55	.76	1.06	1.31	1.40	1.47	1.48	1.48	1.48
Feb. 3	.30	.47	.55	.62	.76	.86	.92	1.01	1.14	1.20	1.22	1.22
Feb. 17	.20	.40	.55	.62	.70	.73	.74	.74	.74	.74	.74	.74
Apr. 29	.68	1.34	1.72	1.87	2.17	2.37	2.78	3.45	4.00	4.20	4.48	4.53
July 13	.33	.65	.95	1.10	1.75	2.25	2.56	2.68	2.71	2.74	2.77	2.77
Aug. 14	.25	.27	.29	.30	.33	.35	.37	.37	.39	.39	.40	.40
Aug. 21	.33	.35	.36	.40	.43	.44	.44	.44	.44	.45	.49	.66
Aug. 22	.39	.50	.58	.58	.64	.93	1.17	1.22	1.24	1.26	1.27	1.51
Aug. 26	.33	.43	.49	.52	.53	.53	.53	.53	.53	.53	.53	.53
Sept. 1	.50	.75	.90	1.03	1.16	1.19	1.19	1.19	1.19	1.19	1.19	1.19
Oct. 4	.40	.53	.55	.68	.78	.96	1.05	1.11	1.26	1.27	1.27	1.27
Oct. 18	.33	.37	.40	.47	.57	.68	.76	.83	.90	.99	1.15	1.24
Nov. 18	.13	.19	.25	.32	.47	.72	.90	1.12	1.26	1.35	1.62	1.68
Nov. 22	.38	.40	.45	.47	.56	.59	.59	.59	.60	.61	.85	.86
Dec. 27	.19	.33	.42	.45	.46	.48	.54	.54	.56	.63	.64	.69
New Orleans												
Feb. 3	.29	.36	.47	.63	.81	.94	1.22	1.45	1.56	1.68	1.71	1.87
Feb. 21	.21	.31	.36	.40	.48	.58	.67	.76	.83	.95	1.03	1.09
Mar. 2	.36	.45	.47	.53	.59	.59	.73	.99	1.01	1.02	1.02	1.02
Mar. 15	.29	.41	.48	.58	.60	.70	.71	.78	.83	.84	.86	.88
Apr. 1	.23	.34	.39	.56	.70	.77	.88	.95	.99	1.17	1.38	1.51
Apr. 2	.25	.50	.66	.80	.94	1.15	1.33	1.61	1.79	1.98	2.07	2.09
Apr. 18	.27	.42	.43	.44	.45	.45	.45	.45	.45	.45	.45	.45
May 6	.55	1.05	1.49	2.06	2.65	3.25	3.59	3.70	3.75	3.86	3.86	3.86
June 6	.39	.71	.98	1.20	1.54	2.24	2.49	2.59	2.60	2.63	2.67	2.67
July 1	.35	.61	.76	.81	.85	.86	.86	.86	.86	.86	.86	.86
July 9	.30	.41	.53	.66	.77	.78	.78	.78	.79	.79	.79	.79
Aug. 1	.46	.79	.95	1.05	1.05	1.21	1.24	1.27	1.28	1.28	1.28	1.29
Aug. 6	.17	.27	.32	.37	.51	.55	.55	.55	.55	.55	.55	.55
Aug. 11	.19	.30	.40	.49	.68	.79	.82	.82	.82	.83	.90	1.03
Sept. 10	.22	.31	.37	.40	.49	.56	.63	.68	1.00	1.17	1.27	1.56
Oct. 9	.22	.37	.48	.51	.51	.51	.51	.51	.51	.51	.51	.51
MAINE												
Caribou Airport												
June 5	.20	.28	.35	.39	.48	.50	.58	.62	.64	.67	.71	.72
July 3-4	.25	.36	.44	.46	.50	.52	.54	.56	.56	.56	.56	.56
Aug. 20	.33	.58	.72	.76	.78	.92	1.00	1.01	1.18	1.24	1.29	1.30
Aug. 29	.27	.29	.30	.31	.32	.33	.34	.34	.34	.34	.34	.34
Sept. 30	.24	.32	.43	.47	.51	.59	.62	.77	.80	.81	.84	.86

EXCESSIVE SHORT DURATION RAINFALL

YEAR 1960

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
MAINE (Cont'd.												
Portland Airport												
May 13	0.28	0.38	0.48	0.48	0.51	0.58	0.58	0.60	0.63	0.63	0.65	0.71
June 5	.25	.47	.50	.52	.53	.55	.55	.60	.62	.62	.62	.62
Sept. 12	.27	.38	.46	.54	.65	.85	.95	1.01	1.06	1.13	1.17	1.28
MARYLAND												
Baltimore												
Apr. 26	.18	.30	.46	.52	.57	.59	.63	.65	.66	.67	.67	.67
May 8	.25	.33	.36	.42	.45	.47	.50	.52	.56	.65	.97	1.35
June 14	.20	.39	.48	.48	.49	.49	.49	.49	.49	.49	.49	.51
Aug. 3	.38	.65	.73	.74	.75	.75	.75	.75	.75	.75	.75	.75
Aug. 10	.45	.70	.80	.80	.80	.80	.81	.81	.81	.82	.85	.87
Aug. 22	.26	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37
Sept. 9	.35	.42	.45	.48	.50	.50	.50	.51	.53	.57	.63	.63
Oct.19-20	.20	.23	.27	.40	.58	.58	.58	.58	.60	.63	.66	.68
Baltimore Airport												
May 8	.23	.39	.49	.55	.61	.75	.79	.81	.83	.86	.89	.91
May 8	.21	.39	.47	.55	.75	.87	.99	1.40	1.45	1.49	1.55	1.60
June 14	.22	.43	.47	.48	.48	.48	.48	.48	.48	.48	.48	.49
June 24	.15	.26	.36	.36	.36	.37	.37	.38	.38	.38	.38	.38
July 13	.53	.69	.88	1.09	1.70	2.17	2.33	2.40	2.55	2.70	2.78	3.02
July 27	.22	.32	.54	.56	.58	.65	.67	.68	.74	.74	.74	.74
Aug. 3	.24	.40	.50	.53	.54	.54	.54	.54	.54	.54	.54	.54
Aug. 4	.18	.27	.35	.43	.58	.67	.71	.73	.74	.74	.74	.74
Aug. 30	.36	.49	.64	.69	.78	.90	.93	.95	1.00	1.00	1.00	1.00
Sept. 4	.26	.34	.39	.41	.45	.45	.45	.45	.45	.45	.45	.45
Frederick Airport												
May 8	.22	.33	.36	.40	.44	.48	.56	.61	.69	.73	.75	.78
June 17	.30	.35	.45	.50	.63	.75	.76	.76	.76	.76	.76	.83
June 29	.30	.45	.60	.68	.74	.75	.75	.83	.83	.83	.83	.83
July 13	.30	.50	.55	.60	.65	.70	.75	.75	.75	.75	.75	.75
Aug. 3	.15	.25	.40	.45	.53	.55	.55	.55	.55	.55	.55	.55
Aug. 9	.41	.50	.56	.60	.64	.76	.85	.86	.86	.86	1.16	1.16
Aug. 15	.20	.33	.40	.45	.50	.52	.55	.57	.58	.58	.58	.58
Aug. 21	.25	.38	.39	.39	.39	.39	.40	.43	.43	.60	.70	.70
Nov. 29	.20	.30	.35	.35	.40	.43	.43	.44	.45	.48	.48	.48
MASSACHUSETTS												
Boston Airport												
June 1	.30	.42	.45	.45	.45	.46	.54	.58	.61	.65	.68	.70
June 1	.30	.50	.70	.90	1.30	1.54	1.55	1.55	1.55	1.60	1.62	1.65
Sept. 12	.16	.31	.46	.59	.78	.91	1.15	1.31	1.52	1.71	1.91	2.01
Nantucket Airport												
July 14	.17	.24	.34	.46	.63	.72	.73	.76	.79	.82	.84	.86
Sept. 20	.18	.32	.44	.50	.57	.72	.84	1.03	1.04	1.05	1.12	1.19
Pittsfield Airport												
June 5	.42	.82	.89	1.01	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.04
July 3	.20	.35	.45	.50	.62	.66	.74	.75	.75	.75	.75	.75
Aug. 14	.27	.47	.55	.57	.57	.57	.60	.60	.60	.61	.62	.62
Sept. 19-20	.18	.32	.39	.55	.73	.85	.92	1.07	1.19	1.30	1.65	1.73
MICHIGAN												
Alpena Airport												
Apr. 24	.38	.51	.56	.60	.63	.68	.70	.70	.70	.72	.80	.80
July 26	.15	.30	.42	.52	.76	.98	1.12	1.25	1.46	1.52	1.61	1.66
Sept. 8	.24	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.33
Detroit Airport												
June 2	.19	.34	.46	.56	.68	.80	.88	.92	.94	.98	1.02	1.02
June 4	.20	.29	.36	.48	.68	.74	.76	.80	.84	.88	.89	.89
June 16	.12	.22	.34	.44	.63	.74	.81	.83	.93	1.01	1.14	1.27
Aug. 9	.44	.70	.78	.88	.92	.92	.92	.92	.93	.94	.96	.96
Detroit Airport (Willow Run)												
June 4	.20	.39	.41	.42	.45	.50	.51	.52	.53	.56	.59	.61
June 22	.25	.30	.31	.34	.41	.47	.51	.52	.52	.52	.52	.52
June 30	.20	.35	.40	.44	.49	.51	.51	.51	.51	.51	.51	.51
Aug. 20	.20	.37	.39	.39	.39	.39	.39	.39	.43	.46	.49	.49
Escanaba												
July 21	.23	.38	.53	.63	.86	1.11	1.15	1.43	1.50	1.53	1.78	1.82
July 25	.20	.37	.42	.48	.60	.75	.78	.90	.95	.96	.99	1.00
July 26	.25	.46	.50	.51	.51	.51	.55	.59	.59	.59	.59	.59
July 29	.45	.85	.90	.93	1.00	1.05	1.05	1.08	1.09	1.09	1.10	1.14
Aug. 28	.23	.30	.43	.49	.78	.92	.96	1.03	1.11	1.16	1.30	1.50
Sept. 2	.20	.35	.50	.68	.75	.79	.81	.83	.89	1.10	1.20	1.53
Sept. 7	.25	.50	.59	.63	.64	.64	.64	.64	.64	.65	.65	.65
Flint Airport												
Mar. 30	.36	.60	.67	.73	.73	.73	.73	.73	.73	.73	.73	.73
June 16	.17	.27	.36	.38	.43	.50	.50	.50	.50	.50	.50	---
June 16	.45	.53	.54	.55	.56	.59	.60	.60	.60	.60	.60	.60
June 29	.34	.48	.50	.51	.52	.52	.52	.52	.52	.52	.52	.52
July 28	.27	.35	.40	.41	.41	.41	.41	.41	.41	.41	.41	.41
Aug. 9	.13	.25	.32	.42	.48	.48	.48	.48	.49	.52	.53	.53
Aug. 14	.35	.56	.73	.78	.93	.94	1.25	1.29	1.30	1.30	1.30	1.30
Sept. 19	.19	.31	.38	.45	.54	.56	.56	.56	.56	.56	.58	.65
Grand Rapids AP												
June 22	.52	.71	.79	.97	1.21	1.29	1.30	1.31	1.31	1.31	1.32	1.32
July 26	.18	.30	.37	.45	.67	.88	1.01	1.25	1.36	1.41	1.43	1.44
Lansing Airport												
May 27	.27	.29	.37	.40	.42	.50	.52	.53	.55	.55	.56	.56
June 16	.27	.33	.37	.46	.48	.52	.58	.61	.62	.62	.62	.62
June 16	.25	.42	.55	.64	.67	.69	.70	.71	.72	.73	.73	.73
Aug. 3	.40	.64	.66	.67	.81	.83	.84	.87	.88	.89	.89	.89
Marquette												
June 1	.20	.35	.47	.60	.88	.91	.93	.96	.98	.99	.99	1.00
July 21	.45	.73	.80	.84	.88	.97	1.00	1.04	1.07	1.09	1.11	1.16
July 22	.33	.50	.51	.52	.52	.54	.55	.56	.57	.58	.59	.60
July 25	.28	.35	.54	.61	.67	.68	.70	.70	.70	.70	.70	.75
Aug. 13	.28	.42	.47	.51	.54	.56	.58	.61	.64	.66	.66	.66
Aug. 28	.27	.51	.70	.86	1.13	1.25	1.39	1.50	1.57	1.62	1.73	1.81
Muskegon Airport												
May 20	.24	.37	.44	.46	.48	.58	.69	.74	.78	.80	.82	.82

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
MICHIGAN (Cont'd.)												
Muskegon Airport (Cont'd.)												
June 22	0.20	0.35	0.42	0.46	0.52	0.53	0.60	0.61	0.61	0.61	0.61	0.79
July 22	.28	.30	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
Nov. 15	.26	.47	.49	.50	.50	.50	.53	.54	.54	.55	.55	.57
Sault Ste. Marie AP												
Aug. 28	.30	.36	.41	.47	.66	.76	.86	1.11	1.26	1.37	1.49	1.53
Sept. 8	.26	.32	.39	.41	.42	.49	.49	.49	.49	.49	.49	.49
MINNESOTA												
Duluth Airport												
June 28	.26	.37	.41	.43	.48	.80	.81	.81	.81	.81	.81	.81
July 17	.53	.54	.57	.61	.62	.68	.70	.70	.70	.70	.70	.70
International Falls AP												
July 24	.80	1.03	1.14	1.24	1.34	1.44	1.46	1.49	1.54	1.55	1.56	1.56
Minneapolis AP												
June 28	.29	.37	.45	.54	.58	.68	.72	.86	.87	.88	.90	.90
Aug. 25	.26	.48	.57	.73	.96	1.10	1.18	1.21	1.23	1.27	1.41	1.44
Rochester Airport												
May 20	.26	.37	.40	.42	.48	.54	.56	.56	.56	.56	.56	.56
May 31	.62	.92	.96	.96	.97	.98	.99	1.06	1.08	1.09	1.12	1.16
July 2	.34	.60	.80	.92	1.02	1.06	1.09	1.11	1.13	1.14	1.17	1.17
Aug. 3	.19	.30	.36	.42	.61	.69	.69	.70	.71	.71	.71	.71
St. Cloud AP												
May 20	.24	.35	.37	.45	.52	.55	.57	.58	.58	.60	.61	.68
July 11	.20	.35	.55	.62	.76	.76	.76	.76	.76	.76	.76	.76
July 28	.22	.34	.44	.66	.74	.75	.75	.75	.75	.75	.75	.75
Aug. 27	.27	.52	.56	.62	.70	.79	1.06	1.14	1.20	1.25	1.29	1.38
Aug. 27	.24	.40	.51	.53	.58	.78	.92	1.12	1.28	1.33	1.33	1.38
MISSISSIPPI												
Jackson Airport												
Jan. 29	.15	.26	.30	.35	.44	.69	.77	.86	.89	.91	.91	.91
Mar. 2	.15	.28	.38	.47	.52	.62	.65	.69	.71	.75	.80	.84
May 6	.47	.80	1.03	1.14	1.35	1.57	1.69	1.97	2.03	2.10	2.13	2.13
June 17	.25	.40	.43	.50	.54	.65	.69	.84	.90	.91	.93	.96
June 24	.18	.31	.44	.49	.49	.52	.52	.52	.52	.52	.52	.52
Aug. 13	.35	.43	.48	.49	.50	.53	.58	.58	.58	.58	.58	.58
Aug. 14	.25	.40	.60	.80	.81	.81	.81	.81	.81	.81	.81	.82
Aug. 19	.25	.45	.55	.67	.75	.78	.80	.84	.90	1.01	1.04	1.14
Aug. 22	.20	.34	.40	.45	.62	.84	1.21	1.59	1.68	1.96	2.23	2.40
Sept. 10	.40	.70	.95	1.10	1.20	1.37	1.37	1.38	1.38	1.38	1.38	1.38
Oct. 5	.26	.38	.43	.47	.49	.55	.59	.61	.64	.68	.70	.71
Oct. 30	.20	.30	.36	.42	.45	.49	.50	.53	.55	.55	.55	.55
Meridian Airport												
Mar. 6	.35	.65	.97	1.02	1.11	1.29	1.48	1.57	1.58	1.61	1.61	1.62
Mar. 29	.16	.28	.38	.45	.60	.86	1.06	1.08	1.22	1.27	1.30	1.35
Apr. 2	.20	.38	.45	.50	.52	.55	.62	.80	.82	.82	.82	.82
May 6	.33	.48	.55	.62	.75	.78	.85	.88	.90	.95	.95	.96
Aug. 10	.20	.33	.44	.54	.80	.80	.83	.85	.85	.85	.85	1.20
Vicksburg												
Feb. 3	.30	.50	.56	.60	.80	1.06	1.27	1.59	1.74	1.89	2.04	2.18
May 5	.38	.59	.73	.85	.89	.90	.91	.91	.97	1.06	1.21	1.39
May 20	.28	.38	.46	.47	.47	.48	.48	.48	.50	.53	.55	.55
June 17	.49	.78	.99	1.20	1.50	1.65	1.72	1.75	1.78	1.79	1.79	1.79
June 25	.24	.35	.42	.50	.63	.81	.89	.94	.98	.99	1.00	1.00
Aug. 1	.32	.35	.35	.35	.39	.39	.39	.39	.39	.39	.39	.39
Aug. 5	.17	.32	.46	.57	.63	.72	.72	.72	.72	.72	.72	.72
Aug. 6	.32	.50	.55	.68	.80	.80	.80	.80	.80	.80	.80	.80
Aug. 11	.19	.32	.48	.57	.77	1.12	1.38	1.49	1.61	1.76	1.92	2.03
Aug. 18	.26	.48	.67	.84	.96	.99	1.01	1.11	1.11	1.12	1.13	1.13
Aug. 19	.23	.38	.55	.67	.71	.89	.99	1.07	1.14	1.22	1.39	1.69
Aug. 22	.49	.88	1.30	1.71	2.44	3.05	3.44	3.85	3.96	4.01	4.06	4.07
Aug. 22	.33	.57	.73	.82	.84	.84	.96	.96	1.05	1.32	1.37	1.90
Aug. 29	.16	.31	.45	.53	.66	.69	.71	.72	.72	.72	.74	.76
Sept. 9	.26	.46	.61	.71	.96	1.08	1.10	1.11	1.12	1.13	1.27	1.27
Oct. 5	.47	.79	1.10	1.30	1.47	1.65	1.74	1.88	1.91	1.95	1.97	1.97
MISSOURI												
Kansas City AP												
Apr. 29	.14	.20	.32	.40	.47	.52	.62	.65	.65	.73	.83	.92
Apr. 29	.25	.34	.36	.37	.39	.46	.48	.53	.57	.60	.62	.66
June 11	.26	.50	.57	.59	.60	.64	.66	.66	.70	.73	.73	.73
June 16	.20	.28	.32	.42	.56	.62	.72	.80	1.00	1.10	1.18	1.25
June 21	.16	.27	.37	.47	.58	.62	.77	.79	.79	.79	.79	.79
Aug. 7	.31	.47	.56	.67	.72	.75	.79	.90	.94	.94	.95	.95
Aug. 16	.20	.35	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41
Aug. 17	.20	.40	.55	.64	.68	.70	.71	.74	.77	.85	.91	.98
Oct. 14	.24	.30	.40	.46	.62	1.00	1.10	1.12	1.17	1.21	1.25	1.32
St. Joseph AP												
Mar. 29	.15	.28	.35	.37	.50	.55	.60	.73	.78	.83	.85	.87
May 15-16	.32	.57	.72	.75	.75	.75	.75	.75	.75	.75	.75	.75
June 21	.33	.65	.85	1.02	1.10	1.16	1.20	1.20	1.20	1.20	1.20	1.20
June 23	.30	.54	.60	.65	.69	.70	.70	.71	.74	.75	.75	.75
June 29	.30	.35	.37	.38	.39	.39	.39	.39	.39	.39	.39	.39
June 30	.55	.80	1.13	1.32	1.49	1.77	1.81	1.81	1.81	1.81	1.81	1.81
July 10	.30	.50	.55	.71	.85	.85	1.04	1.05	1.05	1.05	1.05	1.05
Aug. 7	.14	.26	.30	.33	.50	.54	.63	.93	1.10	1.10	1.10	1.10
Aug. 17	.26	.41	.56	.81	1.06	1.31	1.51	1.71	1.94	1.95	1.98	2.03
Sept. 23	.40	.60	.62	.64	.65	.65	.72	.76	.78	.78	.78	.84
St. Louis AP												
May 24	.30	.45	.60	.71	.80	.81	.82	1.03	1.06	1.08	1.09	1.10
May 25	.20	.37	.44	.46	.47	.49	.50	.50	.50	.51	.51	.51
June 12	.33	.51	.63	.68	.73	.80	.83	.83	.83	.83	1.04	1.04
June 28	.28	.50	.73	.93	1.27	1.40	1.42	1.44	1.44	1.44	1.44	1.48
June 29	.18	.33	.45	.56	.78	1.20	1.41	1.41	1.60	1.81	1.81	1.81
June 30	.38	.72	1.01	1.30	1.47	1.48	1.48	1.48	1.48	1.48	1.48	1.50
July 1	.18	.31	.34	.36	.39	.42	.46	.49	.55	.61	.67	.74
July 10	.19	.30	.35	.38	.41	.43	.64	.66	.71	.72	.73	.74
Springfield AP												
July 17	.42	.75	.98	1.15	1.37	1.62	1.68	1.69	1.71	1.72	1.79	1.79
Aug. 4	.25	.44	.54	.64	.93	1.22	1.47	1.52	1.52	1.52	1.52	1.52
Nov. 15	.30	.49	.64	.68	.94	1.46	1.68	1.72	1.74	1.76	1.78	1.80

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes) 5	10	15	20	30	45	60	80	100	120	150	180
MONTANA												
Billings AP						None						
Glasgow AP						None						
Great Fall AP						None						
Havre						None						
Helena Airport						None						
Kalispell Airport												
Aug. 1	0.18	0.33	0.34	0.35	0.38	0.43	0.44	0.52	0.54	0.56	0.56	0.58
Missoula Airport						None						
NEBRASKA												
Grand Island AP												
June 15	.24	.40	.50	.58	.59	.59	.59	.60	.60	.61	.61	.61
July 11	.33	.50	.65	.75	.85	.93	.96	.97	.98	.99	.99	.99
July 17	.27	.49	.56	.61	.65	.66	.67	.67	.67	.67	.67	.67
Aug. 23	.20	.40	.57	.72	.90	.96	.97	.98	.99	1.05	1.08	1.08
Lincoln												
May 20	.25	.33	.34	.35	.35	.39	.40	.41	.42	.42	.45	.50
May 25	.18	.34	.40	.41	.43	.44	.45	.46	.46	.46	.46	.46
June 15	.22	.33	.37	.39	.40	.41	.43	.45	.46	.46	.47	.48
June 20	.18	.34	.41	.44	.55	.67	.72	.77	.82	1.16	1.21	1.30
July 17	.32	.56	.67	.88	1.09	1.18	1.21	1.25	1.31	1.36	1.46	1.51
Aug. 5	.17	.33	.45	.52	.52	.53	.54	.56	.57	.61	.63	.64
Aug. 6	.28	.35	.36	.37	.37	.37	.38	.55	.55	.78	.84	.98
Aug. 17	.23	.41	.48	.54	.63	.67	.69	.70	.70	.70	.73	.81
Aug. 24	.29	.45	.51	.57	.65	.72	.76	.82	.65	.86	.87	1.20
Sept. 23	.33	.52	.68	.79	1.00	1.06	1.10	1.19	1.25	1.27	1.31	1.33
Oct. 13	.23	.40	.54	.64	.79	.82	.83	.84	.92	.94	.95	.95
Norfolk Airport												
June 9	.30	.38	.47	.55	.85	1.00	1.45	1.56	1.64	1.67	1.67	1.67
July 8	.29	.35	.37	.38	.62	.71	.75	.77	.77	.77	.77	.77
July 17	.25	.35	.46	.46	.46	.47	.48	.48	.52	.52	.52	.53
July 17	.37	.45	.46	.46	.46	.48	.48	.48	.48	.48	.48	.48
Aug. 27	.42	.59	.84	.91	1.01	1.02	1.03	1.05	1.05	1.05	1.05	1.05
Aug. 28	.30	.47	.62	.79	.95	.99	1.00	1.00	1.08	1.25	1.25	1.26
North Platte AP												
June 15	.25	.35	.42	.49	.50	.50	.50	.50	.50	.50	.50	.50
June 19	.20	.38	.40	.41	.43	.48	.49	.49	.50	.50	.50	.50
Omaha Airport												
May 5	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28
May 16	.30	.37	.41	.42	.66	.77	.79	.79	.84	.88	.90	.92
May 24	.20	.28	.37	.46	.63	.75	.98	.98	.98	.98	.98	.98
June 5	.28	.43	.57	.59	.60	.64	.69	.72	.76	.76	.76	.76
June 20	.73	.91	1.07	1.22	1.44	1.61	1.87	1.99	2.05	2.14	2.20	2.31
June 29	.38	.57	.63	.65	.67	.83	.84	.84	.84	.84	.84	.85
July 9	.28	.43	.43	.43	.43	.43	.43	.43	.43	.43	.43	.43
Aug. 5	.22	.39	.51	.59	.76	1.08	1.15	1.28	1.87	1.94	2.04	2.09
Aug. 25	.28	.34	.39	.45	.49	.51	.51	.51	.51	.51	.51	.51
Sept. 17	.25	.42	.44	.45	.45	.45	.67	.75	.78	.81	.83	.83
Scottsbluff AP												
June 11	.34	.49	.59	.63	.67	.71	.74	.75	.75	.76	.76	.76
Valentine AP												
May 24	.17	.33	.39	.42	.45	.52	.53	.61	.72	.78	.81	.84
June 19	.34	.50	.66	.75	.80	.84	.86	.89	.90	.90	.90	.90
Aug. 25	.30	.45	.65	.74	.95	1.08	1.66	1.68	1.70	2.55	2.76	2.96
NEVADA												
Elko Airport						None						
Ely Airport						None						
Reno Airport						None						
Winnemucca Airport												
Sept. 3	.25	.29	.29	.29	.29	.29	.29	.29	.29	.29	.31	.31
NEW HAMPSHIRE												
Concord Airport												
July 3	.28	.45	.46	.47	.51	.54	.57	.65	.66	.70	.70	.70
Aug. 15	.35	.50	.60	.70	.90	1.00	1.00	1.00	1.05	1.15	1.20	1.20
Sept. 12	.13	.24	.35	.41	.66	.76	.85	1.06	1.26	1.46	1.75	2.03
NEW JERSEY												
Atlantic City AP												
July 24	.27	.54	.58	.62	.83	.85	.86	.88	.89	.90	.90	.90
July 30	.21	.42	.60	.70	.89	1.20	1.50	1.65	1.78	1.86	1.98	2.05
Newark Airport												
May 24	.23	.34	.40	.42	.48	.49	.49	.49	.49	.49	.49	.49
July 3	.30	.60	.78	.81	.85	.88	.93	.96	.99	.99	.99	.99
July 30	.13	.23	.35	.44	.56	.77	.96	1.15	1.27	1.37	1.48	1.84
Aug. 21	.40	.49	.53	.53	.53	.53	.53	.53	.53	.53	.53	.53
Sept. 20	.23	.38	.50	.61	.69	.74	.75	.75	.75	.75	.75	.75
Oct. 20	.20	.26	.32	.40	.58	.72	.80	1.04	1.23	1.26	1.37	1.40
Trenton												
June 17	.28	.47	.53	.55	.59	.63	.65	.65	.65	.65	.65	.65
June 24	.27	.40	.44	.56	.47	.47	.47	.47	.47	.47	.47	.47
July 1	.17	.29	.36	.41	.45	.45	.45	.45	.45	.45	.45	.48
July 3	.20	.36	.39	.39	.39	.39	.39	.39	.39	.39	.39	.39
July 14	.44	.67	.88	.95	1.20	1.34	1.45	1.50	1.53	1.56	1.57	1.59
July 30	.16	.28	.42	.55	.72	1.00	1.27	1.54	1.86	2.04	2.25	2.48
Aug. 5	.34	.57	.65	.67	.70	.72	.72	.73	.73	.73	.73	.73
Sept. 11-12	.28	.39	.43	.52	.61	.65	.68	.70	.75	.82	.90	1.02
NEW MEXICO												
Albuquerque AP												
Oct. 15	.25	.26	.33	.37	.43	.47	.48	.51	.54	.58	.62	.65

Station and date	Maximum precipitation in inches (5 to 180 minutes) 5	10	15	20	30	45	60	80	100	120	150	180
NEW MEXICO (Cont'd.)												
Raton Airport												
June 24	0.15	0.29	[illegible]	0.46	0.51	[illegible]	0.65	0.68	[illegible]	0.69	0.69	0.69
[illegible]	.20	.28	[illegible]	.41	.52	[illegible]	1.00	1.09	[illegible]	1.28	1.35	1.43
Sept. 8	.26	[illegible]	[illegible]	.74	[illegible]	[illegible]	.97	1.00	[illegible]	1.03	1.03	1.03
Roswell AP						None						
NEW YORK												
Albany Airport												
July 3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.57	.57	.57	[illegible]	[illegible]	[illegible]
Aug. 15	[illegible]	[illegible]	.44	[illegible]	[illegible]	[illegible]	.57	.57	.57	[illegible]	[illegible]	[illegible]
Aug. 21	[illegible]	[illegible]	[illegible]	.51	.54	.54	.54	.54	.54	[illegible]	[illegible]	[illegible]
Sept. 9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Binghamton AP												
June [illegible]	[illegible]	.64	.76	.88	.89	.91	.92	.92	.92	.92	.92	.92
June 1[illegible]	[illegible]	1.28	1.78	2.12*	2.64*	2.81*	3.01*	3.02*	3.03*	3.04*	3.05*	3.06
June [illegible]	[illegible]	.63	.73	.74	.74	.75	[illegible]	[illegible]	.75	.75	.75	[illegible]
Aug. [illegible]	[illegible]	[illegible]	.35	.41	[illegible]	.64	.70	[illegible]	1.08	1.18	1.23	[illegible]
Aug. 21	[illegible]	.30	.31	[illegible]	.32	.32	.32	.32	.32	.32	.32	.32
Aug. 29	[illegible]	.50	.51	[illegible]	.52	.52	.53	[illegible]	.53	.53	.53	.53
Sept. [illegible]	.21	[illegible]	.39	.39	.47	.58	[illegible]	[illegible]	.59	.59	.59	[illegible]
Buffalo Airport												
June 2[illegible]	.40	.40	.40	.40	.40	.40	.40	.40	.40	.42	[illegible]	.62
Aug. [illegible]	[illegible]	.48	[illegible]	.49	.55	.59	.62	.68	.68	.68	.68	.68
New York												
July 3	.22	.32	.47	.65	.70	.74	.79	.83	[illegible]	.83	.83	.83
July 27	.25	.36	.36	[illegible]	.80	1.08	1.18	1.23	1.37	1.38	1.38	1.38
July 30	[illegible]	[illegible]	[illegible]	[illegible]	1.03	1.15	1.24	1.61	2.03	2.33	2.88	[illegible]
Aug. 19	.19	.36	.36	.46	.56	.61	.77	.92	1.07	1.19	[illegible]	[illegible]
Aug. 21	.41	.55	.58	.58	.58	.58	.58	.58	.58	.58	.58	.58
Sept. 12	.11	.20	.30	.36	.46	.70	.83	1.00	1.21	1.40	1.82	2.08
New York Airport												
July 3	.36	.55	.66	.80	1.00	1.05	[illegible]	1.36	1.40	1.45	1.46	1.46
July 27	.18	.29	.44	.57	.84	1.17	[illegible]	1.63	1.70	1.75	1.82	1.84
July 30	.23	.42	.59	.73	.87	1.26	1.58	1.79	2.04	2.30	2.61	2.66
Aug. 16	.32	.52	.70	.84	.92	.92	.92	.92	.92	.92	.92	.92
Aug. 30	.21	.33	.47	.47	.52	.63	.71	.74	.94	.94	.96	.96
Rochester AP												
June 2	.27	.32	.35	.37	.39	.44	.47	[illegible]	[illegible]	.53	[illegible]	.53
July 30	.27	.37	.37	.38	.38	.47	[illegible]	[illegible]	.56	.56	.56	.56
Aug. 3	[illegible]	.48	.54	.59	.70	.74	.75	.75	.76	.76	.76	.76
Aug. 7	.32	.48	.56	.69	.73	.73	.73	.73	[illegible]	[illegible]	[illegible]	.79
Syracuse AP												
Sept. 9	.38	[illegible]	.70	.84	1.00	1.39	1.47	1.48	1.50	1.50	1.54	1.76
NORTH CAROLINA												
Asheville												
July 10	.17	.34	.42	[illegible]	.48	.52	.59	[illegible]	[illegible]	[illegible]	[illegible]	.67
Aug. 7	.21	.36	.44	.47	.64	.69	.69	.69	.69	.69	.69	.69
Aug. 9	.16	.32	.39	.42	.51	.54	.55	.56	.56	.57	.59	.64
Aug. 14	.17	.34	.49	.66	.76	.83	.84	.85	.85	.85	.88	.89
Aug. 18	.28	.51	.64	[illegible]	.65	.65	.66	.66	.67	.67	.67	.67
Oct. 3	.16	.27	.35	.42	.64	.68	.71	.74	.78	.80	.81	.81
Cape Hatteras												
Feb. 18	.25	.33	.36	.37	.40	.41	.41	.41	.41	[illegible]	[illegible]	[illegible]
Apr. 4	.26	.34	.45	.46	.49	.52	.59	.62	.64	.70	.75	.77
Apr. 5	.25	.45	.53	.68	.93	.99	1.01	1.09	1.23	1.30	1.34	[illegible]
May 8	.46	.67	.73	.74	.75	.77	.77	.79	.79	.81	.91	[illegible]
May 27	.42	.64	.91	.93	1.00	1.06	1.09	1.12	1.21	1.24	1.24	1.24
June 21	.30	.55	.80	[illegible]	1.35	1.70	1.88	1.98	2.01	2.05	[illegible]	2.05
June 30	.36	.70	.82	.89	1.07	1.11	1.12	1.14	1.18	1.22	1.44	1.52
July 5	.25	.30	.40	.42	.50	.61	.86	1.01	1.06	1.10	[illegible]	1.26
July 21	.16	.29	[illegible]	[illegible]	.55	.61	.65	.65	.65	.73	.76	.76
July 22	[illegible]	[illegible]	.61	.78	.82	.85	.85	.85	.85	.85	[illegible]	.85
Aug. 11	.25	.36	.42	[illegible]	.44	.44	.44	.44	.44	.44	.44	.44
Oct. 20	[illegible]	.46	.66	.83	.91	.97	1.00	1.00	1.00	1.00	[illegible]	1.00
Dec. 16	.14	.24	[illegible]	.44	.63	.72	.86	.95	1.14	1.24	1.41	1.53
Dec. 21	.19	.32	.39	[illegible]	.62	.79	.90	.96	1.11	1.16	1.24	1.32
Charlotte AP												
Feb. 10	.34	.36	.38	[illegible]	.49	.51	[illegible]	[illegible]	.57	.59	[illegible]	.64
July 1	.26	.48	.58	.61	.66	.66	[illegible]	[illegible]	.66	.66	.66	.66
Aug. 14	[illegible]	.30	.42	[illegible]	.73	.97	[illegible]	[illegible]	1.10	1.11	[illegible]	1.15
Greensboro AP												
Feb. 10	.18	.29	.37	[illegible]	.47	.56	.64	[illegible]	[illegible]	.74	[illegible]	.76
May 25	.21	[illegible]	.47	.52	[illegible]	[illegible]	.66	[illegible]	[illegible]	.71	[illegible]	.71
May 26	.32	[illegible]	.57	[illegible]	.59	.60	.62	[illegible]	[illegible]	.64	.87	[illegible]
July 11	[illegible]	[illegible]	[illegible]	[illegible]	.80	1.14	1.35	[illegible]	[illegible]	1.77	1.88	[illegible]
Aug. 22	.29	.35	[illegible]	.61	.78	.82	.82	[illegible]	.87	.92	1.25	[illegible]
Sept. 1	[illegible]	.30	[illegible]	[illegible]	[illegible]	.65	.65	[illegible]	[illegible]	.66	.66	[illegible]
Oct. 5	.17	.29	.39	.42	[illegible]	[illegible]	.47	.47	.47	.48	.48	[illegible]
Raleigh AP												
Feb. [illegible]	.30	[illegible]	.32	[illegible]	.37	.42	[illegible]	[illegible]	[illegible]	.63	.70	.75
Apr. 27	.21	.39	.41	.42	.42	.46	[illegible]	[illegible]	[illegible]	[illegible]	.89	.89
May 8	[illegible]	[illegible]	.62	.70	.97	1.27	[illegible]	1.64	1.69	1.72	1.73	1.74
May 25	.25	.31	.46	.61	.63	.64	.67	.68	.69	.71	1.22	1.25
June 21	.18	.35	.42	.61	.75	.98	1.07	1.18	1.21	1.32	1.37	1.37
July 2	.35	.52	.60	.61	.78	.96	.97	.98	1.08	1.09	1.09	1.10
July 10	.25	[illegible]	.49	[illegible]	.56	.57	.58	.58	.59	.60	.60	.60
July 14	[illegible]	.62	.80	[illegible]	1.00	1.02	[illegible]	1.02	1.02	1.02	1.02	[illegible]
Aug. 6	[illegible]	.45	.66	.69	.78	.80	[illegible]	.90	.90	.90	.90	.90
Aug. 8	.26	[illegible]	.64	[illegible]	.85	.86	.87	.90	.91	.92	1.00	1.05
Aug. 16	.35	.70	.92	.94	.95	.95	[illegible]	.95	.99	1.00	1.00	1.00
Sept. 30	.30	.42	.51	.57	.72	.74	.79	.79	.79	.79	.79	.80
Oct. 20	.32	.33	.34	.34	.34	.34	[illegible]	.42	.43	.44	.53	.58
Wilmington AP												
Feb. 5	[illegible]	.33	.35	.37	[illegible]	[illegible]	[illegible]	.60	.60	.62	.63	.63
Feb. 2[illegible]	.24	.46	[illegible]	.52	[illegible]	[illegible]	.73	.85	.99	1.14	1.30	1.38
Mar. 3	.22	.33	.36	.41	.46	[illegible]	.63	.76	.83	.95	1.15	1.26
Mar. 30	.34	.67	.79	.83	1.09	[illegible]	1.81	1.97	2.25	2.36	2.74	3.02
Apr. 2	.22	.38	[illegible]	[illegible]	.67	.70	[illegible]	.90	.90	.92	.96	.98
May 27	.70	1.05	1.29	1.52	1.80	1.85	1.88	1.92	2.00	2.00	2.00	2.00
May 28	.38	.65	.82	.98	1.08	1.10	1.11	1.13	1.14	1.14	1.19	1.20

* Amounts interpolated

EXCESSIVE SHORT DURATION RAINFALL

YEAR 1960

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
NORTH CAROLINA (Cont'd.)												
Wilmington AP (Cont'd.)												
July 1	0.37	0.65	0.74	0.78	0.83	0.84	0.81	0.84	0.84	0.84	0.96	1.00
July 7	.21	.37	.46	.52	.60	.61	.67	.70	.74	.71	.74	.74
July 14	.25	.38	.45	.55	.60	.73	.89	.93	.95	1.03	1.08	1.10
July 19	.20	.33	.42	.43	.45	.47	.48	.48	.48	.48	.48	.48
July 21	.15	.29	.35	.37	.39	.39	.39	.50	.50	.50	.50	.50
July 25	.17	.33	.47	.57	.58	.58	.80	.81	.81	.81	.81	.81
July 31	.16	.28	.36	.38	.40	.40	.44	.44	.44	.44	.44	.44
Aug. 9	.35	.62	.90	1.03	1.75	1.89	1.99	2.08	2.08	2.08	2.12	2.14
Sept. 11	.13	.25	.34	.36	.55	.72	1.47	1.73	1.97	2.21	2.28	2.52
Sept. 11	.20	.34	.59	.79	1.08	1.25	1.30	1.32	1.34	1.35	1.36	1.36
Sept. 30	.25	.40	.65	.75	.86	.93	.96	1.02	1.02	1.02	1.03	1.04
NORTH DAKOTA												
Bismarck Airport												
June 19	.27	.43	.53	.63	.69	.75	1.13	1.22	1.29	1.29	1.29	1.29
June 27	.20	.35	.40	.40	.42	.42	.42	.42	.42	.42	.42	.42
Aug. 16	.17	.34	.36	.42	.46	.49	.58	.62	.69	.74	.77	.77
Devils Lake												
July 10	.40	.78	1.05	1.13	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Aug. 23	.29	.38	.38	.38	.39	.44	.45	.48	.50	.50	.50	.50
Fargo Airport												
Apr. 23	.28	.38	.46	.54	.66	.78	.88	.98	1.06	1.14	1.28	1.42
May 31	.20	.30	.36	.37	.38	.41	.43	.43	.43	.43	.43	.43
July 10	.29	.47	.58	.77	1.02	1.08	1.24	1.27	1.30	1.30	1.30	1.32
July 24	.22	.42	.58	.60	.62	.62	.62	.62	.62	.62	.62	.62
Aug. 23	.28	.35	.42	.58	.64	.66	.73	.82	.90	.95	1.02	1.16
Aug. 25	.46	.64	.94	1.14	1.24	1.28	1.32	1.40	1.44	1.50	1.54	1.58
Williston												
June 12	.32	.53	.80	1.05	1.31	1.33	1.60	1.88	2.00	2.03	2.06	2.06
June 19	.19	.36	.49	.68	.92	1.28	1.49	1.54	1.56	1.56	1.56	1.56
Aug. 15	.31	.46	.50	.55	.62	.64	.67	.68	.68	.68	.68	.68
OHIO												
Akron Airport												
Mar. 30	.26	.40	.46	.46	.46	.46	.46	.46	.46	.46	.46	.46
Apr. 16	.26	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27
June 12	.27	.38	.48	.55	.65	.73	.91	.97	.97	1.06	1.34	1.48
June 13	.33	.39	.41	.44	.62	.87	.92	.92	.92	.96	1.13	1.14
June 22	.26	.30	.34	.36	.42	.52	.56	.56	.56	.56	.56	.56
July 26	.40	.61	.63	.66	.68	.69	.69	.70	.71	.77	.78	.79
July 27	.46	.68	.82	.92	.94	.94	.94	.94	.94	.94	.95	.95
Aug. 7	.18	.29	.38	.40	.42	.42	.42	.42	.42	.42	.42	.42
Aug. 20	.14	.22	.34	.44	.48	.49	.50	.54	.58	.59	.76	.77
Cincinnati Abbe Obs.												
June 13	.37	.49	.56	.60	.62	.65	.68	.69	.70	.71	.72	.74
June 22	.29	.39	.41	.43	.47	.62	.63	.63	.64	.64	.64	.64
July 3	.40	.63	.84	.95	1.19	1.29	1.40	1.51	1.62	1.67	1.69	1.69
Aug. 9	.41	.63	.73	.82	1.47	1.74	1.92	2.17	2.22	2.37	3.11	3.29
Aug. 19	.21	.39	.44	.50	.65	.80	.97	1.02	1.05	1.05	1.05	1.05
Cleveland AP												
July 26	.15	.24	.32	.40	.42	.46	.49	.56	.58	.58	.62	.62
Aug. 7	.44	.61	.63	.64	.64	.64	.76	.81	.81	.95	1.01	1.14
Aug. 14	.14	.28	.33	.34	.62	.65	.69	.70	.73	.77	.77	.78
Aug. 20	.48	.70	.90	1.02	1.06	1.07	1.12	1.13	1.33	1.51	1.52	1.53
Aug. 29	.28	.43	.52	.56	.95	1.05	1.06	1.06	1.06	1.11	1.12	1.12
Columbus Airport												
May 16	M	M	M	M	.70	.82	1.07	1.11	1.11	1.11	1.11	1.11
May 22	.23	.30	.38	.40	.47	.54	.71	.71	.77	.81	.82	.46
May 27	.20	.30	.35	.37	.39	.41	.44	.44	.44	.44	.45	.46
July 1	.29	.46	.51	.54	.56	.59	.59	.73	.80	.81	.81	.82
July 26	.35	.70	.88	.88	.88	.88	.88	.88	.89	.91	1.01	1.01
Oct. 2	.22	.33	.43	.50	.55	.59	.64	.70	.75	.78	.85	.90
Oct. 9	.26	.31	.37	.38	.38	.42	.49	.52	.54	.54	.56	.58
Dayton Airport												
June 2	.36	.50	.70	.74	.82	.82	.83	.83	.84	.84	.84	.84
June 17	.23	.36	.45	.57	.79	.96	1.11	1.16	1.18	1.39	1.40	1.40
July 13	.30	.60	.75	.92	[illegible]	1.45	1.77	1.98	2.02	2.04	2.09	2.11
Aug 21	.21	.32	.32	.34	.38	.39	.39	.39	.40	.40	.41	.41
Mansfield Airport												
June 13	.25	.50	.68	.68	.69	.80	.91	.92	.92	.92	1.11	1.11
Sept. 9	.30	.59	.59	.59	.59	.59	.59	.59	.61	.61	.61	.61
Sandusky												
June 4	.20	.34	.49	.64	.78	1.02	1.02	1.03	1.04	1.06	1.11	1.18
July 1	.27	.30	.35	.40	.45	.52	.55	.63	.72	.76	.86	.91
July 26	.25	.30	.35	.35	.35	.35	.35	.35	.35	.65	.65	.65
Aug. 3	.25	.35	.41	.42	.44	.45	.45	.45	.77	.79	.82	.93
Sept. 9	.29	.52	.63	.65	.68	.68	.69	.69	.70	.71	.80	.80
Toledo Airport												
Apr. 30	.25	.35	.40	.45	.47	.48	.50	.50	.50	.50	.50	.52
May 28	.20	.30	.43	.43	.50	.53	.58	.58	.58	.58	.58	.58
June 11	.18	.36	.45	.47	.49	.50	.50	.51	.70	.72	.73	.74
June 22	.35	.70	.95	.97	.97	.97	.97	.97	.97	.97	.97	.97
July 1	.20	.30	.37	.42	.55	.67	.93	1.03	1.15	1.40	1.55	1.70
Aug. 7	.20	.30	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
Aug. 14	.27	.28	.28	.28	.32	.32	.32	.32	.32	.32	.32	.32
Sept. 4	.45	.75	.83	.90	1.28	1.60	1.71	1.78	1.78	1.78	1.78	1.78
Youngstown AP												
May 17	.18	.30	.36	.36	.37	.39	.39	.39	.39	.39	.39	.39
June 11	.27	.33	.50	.52	.76	.88	.99	1.03	1.04	1.04	1.04	1.04
July 3	.17	.31	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32
July 30	.35	.53	.63	.70	.77	.80	.94	.95	.95	.95	.95	.95
Aug. 4	.50	.81	.92	.95	.99	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Aug. 7	.28	.44	.64	.65	.66	.66	.66	.66	.66	.66	.66	.66
Aug. 20	.30	.43	.50	.59	.59	.59	.59	.59	.59	.59	.59	.59
Aug. 29	.17	.34	.45	.51	.53	.57	.57	.57	.57	.57	.57	.57
OKLAHOMA												
Oklahoma City AP												
Apr. 28	.35	.70	.90	1.05	1.20	1.35	1.55	1.75	1.78	1.85	1.94	1.97
May 4	.23	.45	.52	.58	.66	.69	.70	.70	.70	.70	.70	.70

M Missing

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
OKLAHOMA (Cont'd.)												
Oklahoma City AP (Cont'd.)												
May 5	0.27	0.47	0.66	0.72	0.76	0.80	0.81	0.81	0.81	0.84	0.84	1.21
May 16	.14	.28	.40	.49	.55	.64	.71	.76	.79	.82	.82	.82
May 18	.12	.21	.29	.33	.50	.60	.62	.62	.62	.62	.62	.62
May 19	.16	.28	.40	.41	.42	.49	.63	.70	.73	.75	.77	.78
June 12	.47	.80	.96	.99	1.16	1.19	1.28	1.31	1.60	1.74	1.74	2.06
June 25	.16	.25	.35	.45	.60	.75	1.10	1.23	1.37	1.68	1.73	1.88
July 4	.25	.35	.45	.50	.60	.65	.65	.70	.72	.80	.85	.85
July 23	.30	.50	.60	.70	1.05	1.50	1.80	1.89	1.91	2.15	3.10	3.28
July 29	.81	1.22	1.39	1.42	1.51	1.51	1.51	1.69	1.78	1.78	1.78	1.78
Aug. 18	.22	.31	.33	.46	.49	.50	.52	.53	.67	.68	.71	.72
Aug. 21	.30	.35	.45	.64	.85	.97	1.04	1.05	1.10	1.17	1.17	1.20
Sept. 26	.25	.45	.58	.77	.80	.80	.85	.93	1.10	1.12	1.12	1.12
Oct. 28	.22	.36	.45	.57	.68	.71	.78	.80	.80	.80	.80	.80
Tulsa AP												
Apr. 28	.40	.52	.55	.58	.82	1.10	1.19	1.37	1.45	1.46	1.47	1.48
May 5	.45	.75	.87	.97	1.28	2.03	2.24	2.27	2.29	2.32	2.38	2.44
July 4	.28	.55	.80	1.00	1.28	1.60	1.93	2.07	2.20	2.25	2.53	2.73
July 22	.25	.40	.50	.65	.80	1.03	1.28	1.60	2.07	2.32	2.34	2.34
Aug. 18	.20	.33	.35	.37	.45	.47	.50	.55	.60	.63	.68	.69
Sept. 20	.25	.43	.57	.62	.65	.66	.66	.66	.66	.66	.66	.66
Oct. 29	.20	.38	.40	.43	.47	.47	.50	.55	.57	.57	.58	.58
OREGON												
Astoria Airport												
May 22	.20	.37	.41	.42	.44	.45	.45	.45	.45	.45	.45	.45
Burns						None						
Eugene Airport												
Nov. 24	.14	.26	.40	.48	.54	.69	.78	.83	.94	1.15	1.30	1.40
Meacham Airport						None						
Medford Airport						None						
Pendleton Airport						None						
Portland						None						
Portland Airport						None						
Roseburg Airport						None						
Sexton Summit						None						
PACIFIC AREA												
Canton Island AP												
June 3	.21	.31	.35	.36	.38	.39	.41	.51	.72	.94	1.12	1.13
June 3	.27	.48	.78	.96	1.21	1.25	1.28	1.31	1.35	1.37	1.44	1.76
July 15	.22	.42	.57	.68	.79	.89	.97	1.02	1.06	1.06	1.06	1.06
Aug. 21	.28	.53	.67	.70	.70	.70	.70	.70	.70	.70	.70	.72
Aug. 28	.20	.31	.34	.36	.36	.36	.38	.38	.41	.41	.41	.41
Johnston Island AP												
Mar. 2	.21	.32	.40	.48	.60	.72	.79	.98	1.03	1.27	1.45	1.64
Mar. 8	.22	.28	.38	.53	.72	.78	.83	.88	.88	.88	.88	.88
Mar. 29	.20	.29	.39	.52	.60	.61	.61	.61	.62	.62	.63	.73
Aug. 7	.28	.41	.53	.55	.66	.66	.66	.66	.67	.68	.72	.72
Sept. 28	.39	.57	.75	.82	.96	1.17	1.55	1.89	1.94	1.98	2.03	2.06
Oct. 2	.41	.64	.87	1.01	1.19	1.36	1.37	1.38	1.39	1.40	1.40	1.40
Oct. 22	.32	.65	.69	.79	.90	.92	.96	.96	.96	.96	.96	.96
Oct. 30	.19	.29	.37	.43	.57	.69	.75	.82	1.01	1.26	1.34	1.45
Koror												
Jan. 2	.11	.22	.31	.40	.46	.46	.46	.46	.46	.46	.46	.46
Jan. 25	.13	.28	.41	.52	.72	.92	1.06	1.24	1.42	1.52	1.79	2.06
Jan. 26	.24	.37	.41	.51	.58	.61	.61	.61	.61	.61	.64	---
Jan. 26	.18	.30	.47	.60	.79	.88	.92	.94	.94	.95	1.13	1.14
Jan. 31	.17	.31	.36	.40	.43	.48	.49	.50	.50	.55	.74	.78
Feb. 7	.23	.38	.44	.48	.51	.52	.56	.66	.75	.96	1.01	1.10
Feb. 9	.33	.56	.71	.80	1.18	1.33	1.43	1.72	2.23	2.31	2.34	2.52
Feb. 20	.26	.45	.58	.65	.67	.71	.82	.83	.87	.98	1.02	1.02
Mar. 10	.23	.34	.41	.48	.53	.62	.67	.71	.77	.87	1.01	1.12
Mar. 22	.19	.36	.38	.44	.55	.56	.57	.57	.58	.59	.60	.61
Apr. 8	.17	.25	.33	.40	.44	.52	.56	.58	.58	.58	.59	.68
Apr. 18	.57	.96	1.07	1.10	1.42	1.52	1.63	1.76	1.90	2.01	2.48	2.91
Apr. 19	.23	.31	.31	.31	.31	.31	.36	.36	.36	.36	.36	.36
Apr. 25	.31	.45	.45	.53	.53	.54	.54	.54	.67	.75	.75	.79
May 3	.27	.44	.51	.54	.67	.75	.76	.77	.91	1.11	1.11	1.20
May 11	.20	.33	.40	.42	.45	.50	.55	.60	.65	.68	.73	.75
May 15	.23	.33	.36	.36	.36	.36	.36	.36	.36	.36	.36	.36
May 24	.12	.24	.36	.42	.48	.58	.63	.65	.68	.68	.68	.68
May 26	.27	.46	.65	.76	1.04	1.23	1.50	1.73	1.76	1.81	1.89	1.92
June 1	.24	.40	.49	.60	.72	1.12	1.37	1.49	1.61	1.85	2.13	2.26
June 13	.33	.60	.86	1.17	1.73	1.98	1.98	1.98	2.00	2.00	2.00	2.00
June 23	.21	.30	.42	.50	.58	.59	.60	.63	.65	.67	.68	.71
June 30	.17	.32	.37	.41	.43	.43	.43	.43	.43	.43	.43	.43
July 3	.22	.34	.38	.40	.55	.78	.89	.91	.91	.91	.91	.91
July 14	.20	.31	.43	.49	.58	.61	.61	.67	.67	.67	.67	.67
July 20	.20	.31	.35	.39	.43	.43	.43	.43	.44	.44	.44	.44
July 25	.27	.40	.54	.66	.83	.87	.87	.87	.87	.87	.87	.87
July 27	.22	.39	.54	.68	.81	.83	.83	.83	.83	.83	.83	.83
July 27	.30	.50	.67	.88	1.23	1.46	1.54	1.57	1.61	1.65	1.75	1.79
July 30	.26	.36	.54	.63	.65	.66	.72	.85	.86	1.08	1.19	1.38
Aug. 4	.15	.26	.40	.47	.50	.53	.54	.58	.59	.60	.61	.63
Aug. 13	.25	.38	.45	M	.72	.74	.75	.75	.75	M	1.39	1.40
Aug. 14	.18	.31	.44	.50	.51	.52	.52	.53	.53	.75	.83	.89
Aug. 16	.28	.48	.60	.71	.81	.92	.93	.93	.93	.93	.94	.94
Aug. 28	.23	.40	.55	.67	.82	.83	.85	.87	.90	.91	.91	.91
Aug. 31	.21	.32	.39	.40	.41	.41	.60	.66	.66	.69	.69	.69
Sept. 1	.36	.65	1.02	1.32	1.82	2.36	2.59	2.63	2.71	2.75	2.77	2.78
Sept. 5	.17	.30	.43	.53	.67	.71	.71	.71	.71	.71	.75	.84
Sept. 9	.25	.40	.50	.66	.79	.84	1.08	1.26	1.30	1.30	1.53	1.67
Sept. 10	.36	.64	.92	1.19	1.43	1.54	1.60	1.62	1.67	1.68	1.69	1.69
Sept. 15	.21	.33	.40	.46	.55	.58	.58	.85	1.02	1.10	1.14	1.27
Sept. 25	.19	.27	.38	.46	.53	.54	.54	.54	.54	.54	.54	.54
Sept. 28	(.27)	.40	(.45)	(.63)	(.84)	1.00	1.01	1.43	1.43	1.43	1.43	1.43
Sept. 29	.24	.44	.60	.73	.90	1.10	1.15	1.17	1.17	1.17	1.17	1.29
Sept. 30	.27	.49	.62	.67	.74	.75	.75	.75	.75	.75	.77	.78
Oct. 10	.22	.37	.45	.51	.66	.83	.90	.92	.93	.93	.94	.96
Oct. 18	.26	.46	.58	.59	.60	.61	.61	.61	.61	.61	.75	.75

( ) Estimated Data

EXCESSIVE SHORT DURATION RAINFALL

Station and date	5	10	15	20	30	45	60	80	100	120	150	180
	Maximum precipitation in inches (5 to 180 minutes)											
PACIFIC AREA (Cont'd.)												
Koror (Cont'd.)												
Oct. 19	0.22	0.37	0.41	0.42	0.42	0.42	0.44	0.52	0.55	0.55	0.61	0.65
Oct. 19	.33	.44	.44	.44	.48	.49	.49	.50	.52	.52	.52	.52
Oct. 20	.37	.72	1.03	1.20	1.27	1.27	1.29	1.30	1.31	1.32	1.32	1.32
Oct. 29	.32	.52	.55	.55	.55	.55	.56	.56	.58	.58	.58	.58
Nov. 3	.27	.52	.69	.89	1.12	1.48	1.62	1.69	1.70	1.73	1.79	1.81
Nov. 17	.15	.30	.38	.43	.50	.54	.58	.65	.71	.75	.81	.85
Nov. 27	.13	.23	.32	.40	.52	.75	.92	.96	.97	.98	.99	1.00
Dec. 8	.31	.53	.73	.88	1.06	1.19	1.26	1.36	1.45	1.49	1.52	1.52
Dec. 10	.16	.26	.38	.49	.67	.82	.85	.85	.85	.85	.85	.86
Dec. 26	.18	.30	.36	.45	.56	.64	.68	.98	1.16	1.25	1.32	1.36
Dec. 27	.45	.77	1.04	1.12	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Majuro Airport												
Jan. 26	.21	.30	.36	.44	.53	.73	.88	1.07	1.14	1.23	1.30	1.31
Jan. 26	.18	.31	.40	.51	.58	.66	.72	.75	.76	.76	.77	.77
Mar. 3	.19	.27	.30	.36	.54	.63	.70	.82	.86	.88	.88	.89
Mar. 9	.35	.65	.92	1.07	1.23	1.38	1.46	1.54	1.61	1.65	1.79	1.91
Mar. 10	.27	.49	.59	.70	.73	.74	.74	.74	.76	.76	.84	.92
Mar. 28	.38	.62	.72	.76	.81	.83	1.06	1.13	1.23	1.24	1.59	1.72
Mar. 31	.19	.25	.38	.43	.47	.48	.48	.48	.48	.48	.48	.48
Apr. 2	.20	.31	.36	.45	.53	.55	.57	.68	.72	.72	.72	.72
Apr. 2	.40	.58	.65	.68	.72	.86	.92	.98	1.00	1.19	1.19	1.19
Apr. 7	.32	.58	.86	1.09	1.25	1.46	1.66	1.75	1.78	1.82	1.87	1.89
Apr. 8	.19	.34	.47	.52	.66	.80	.88	.96	1.12	1.23	1.35	1.43
Apr. 12	.26	.48	.62	.80	1.01	1.19	1.30	1.37	1.43	1.50	1.55	1.70
Apr. 13	.15	.30	.42	.49	.56	.62	.66	.71	.75	.77	.79	.79
Apr. 16	.27	.46	.66	.82	.95	1.09	1.20	1.36	1.46	1.53	1.62	1.69
Apr. 19	.37	.50	.53	.55	.57	.58	.58	.59	.59	.59	.59	.59
Apr. 25	.18	.30	.32	.33	.34	.35	.35	.35	.35	.35	.35	.35
Apr. 29	.35	.59	.75	.88	1.47	1.65	1.72	1.85	1.94	2.05	2.39	2.49
May 8	.21	.32	.43	.47	.53	.60	.63	.76	.79	.81	.89	1.02
May 10	.16	.28	.3	.42	.49	.49	.49	.49	.49	.49	.51	[illegible]
May 11	.31	.57	.6	.69	.70	.71	.71	.71	.73	.73	.73	.90
May 15	.28	.44	.50	.58	.71	.80	.83	.86	.87	.90	.92	.95
May 19	.23	.32	.34	.35	.36	.36	.36	.36	.42	.52	.53	.53
June 16	.38	.46	.60	.86	1.14	1.14	1.14	1.21	1.21	1.21	1.23	1.25
June 19	.18	.33	.41	.42	.42	.42	.42	.42	.42	.42	.42	.42
June 23	.17	.31	.39	.46	.50	.50	.50	.50	.50	.50	.50	.50
June 28	.15	.27	.34	.41	.53	.58	.58	.58	.58	.58	.58	.58
July 3	.34	.59	.78	1.04	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
July 12	.24	.37	.45	.53	.53	.53	.53	.74	.74	.74	.74	.74
July 15	.25	.33	.40	.43	.43	.43	.43	.43	.47	.47	.47	.47
July 17	.16	.24	.35	.36	.38	.38	.38	.38	.38	.38	.38	.38
July 21	.34	.63	.97	1.07	1.12	1.38	1.53	1.70	1.75	1.75	1.75	1.75
July 21	.18	.33	.45	.59	.78	.94	1.02	1.32	1.40	1.41	1.54	1.69
July 22	.29	.58	.75	.97	1.07	1.23	1.34	1.50	1.58	1.59	1.76	2.54
July 25	.25	.37	.41	.45	.49	.49	.49	.49	.49	.49	.49	.49
Aug. 2	.32	.55	.62	.68	.74	.81	.87	.93	1.05	1.10	1.14	1.15
Aug. 17	.16	.29	.43	.58	.79	1.05	1.29	1.37	1.39	1.39	1.40	1.45
Aug. 25	.28	.45	.55	.63	1.02	1.35	1.45	1.50	1.56	1.81	2.06	2.15
Aug. 28	.18	.31	.42	.52	.66	.82	1.02	1.04	1.10	1.16	1.20	1.30
Sept. 3	.26	.36	.50	.57	.63	.67	.73	.81	.85	.85	.85	.85
Sept. 7	.23	.36	.47	.56	.68	.68	.68	.68	.68	.68	.68	.68
Sept. 13	.22	.34	.47	.51	.57	.60	.62	.64	.64	.64	.64	.64
Sept. 27	.24	.37	.58	.63	.76	.80	.84	.92	.99	1.03	1.06	1.18
Oct. 1	.19	.32	.37	.38	.38	.38	.38	.38	.38	.38	.38	.38
Oct. 11	.28	.43	.46	.48	.50	.54	.54	.54	.63	.68	.75	.81
Oct. 13	.20	.35	.35	.35	.35	.35	.35	.47	.48	.48	.48	.48
Oct. 13	.29	.34	.35	.35	.35	.35	.35	.37	.37	.50	.69	.71
Oct. 21	.31	.41	.42	.42	.42	.42	.42	.42	.43	.43	.44	.44
Oct. 24	.25	.37	.42	.44	.46	.48	.48	.48	.48	.48	.76	.99
Oct. 26	.41	.72	.93	.99	1.12	1.26	1.28	1.28	1.28	1.28	1.28	1.28
Nov. 5	.43	.78	1.12	1.34	1.71	2.03	2.08	2.15	2.21	2.30	2.37	2.39
Nov. 13	.20	.28	.33	.41	.50	.61	.61	.61	.61	.61	.61	.61
Nov. 13	.16	.28	.36	.41	.50	.65	.65	.66	.66	.66	.68	.69
Nov. 14	.15	.28	.36	.47	.56	.70	.73	.73	.73	.74	.76	.76
Nov. 19	.34	.49	.51	.52	.55	.58	.76	1.07	1.12	1.13	1.26	1.26
Nov. 20	.22	.44	.51	.53	.60	.63	.65	.73	.76	.82	.87	.94
Nov. 25	.17	.28	.35	.40	.43	.46	.49	.53	.61	.67	.77	.85
Nov. 29	.38	.69	.88	1.15	1.63	2.05	2.22	2.42	3.17	3.28	3.35	3.35
Ponape												
Jan. 5	.13	.25	.35	.36	.41	.42	.42	.42	.45	.47	.47	.49
Jan. 22	.21	.35	.49	.57	.69	.76	.82	.95	1.02	1.34	1.52	1.74
Jan. 27	.18	.25	.34	.37	.61	.66	.66	.66	.74	.75	.75	.80
Jan. 28	.29	.48	.61	.77	.98	1.14	1.26	1.27	1.27	1.27	1.46	1.68
Jan. 29	.15	.25	.35	.42	.53	.65	.72	.75	.77	.77	.78	.78
Jan. 31	.15	.25	.38	.45	.65	.74	.76	.79	.82	.84	.84	.84
Jan. 31	.27	.37	.52	.61	.62	.62	.65	1.10	1.11	1.16	1.17	1.19
Feb. 17	.44	.57	.59	.70	.80	.91	.97	.98	.98	.98	1.31	1.90
Feb. 17	.21	.34	.37	.39	.46	.51	.51	.51	.51	.51	.51	.52
Feb. 18	.33	.47	.58	.78	.92	1.35	1.50	1.63	1.71	1.84	2.14	2.25
Mar. 4	.36	.49	.55	.56	.62	.65	.74	1.00	1.14	1.18	1.22	1.30
Mar. 5	.26	.46	.58	.64	.67	.69	.70	.78	.78	.78	.78	.79
Mar. 7	.20	.31	.42	.52	.59	.60	.61	.64	.65	.65	.65	.65
Mar. 8	.17	.30	.34	.37	.48	.56	.81	.91	.93	.99	1.09	1.15
Mar. 11	.33	.39	.39	.39	.39	.47	.48	.49	.49	.49	.49	.56
Mar. 17	.25	.33	.33	.36	.38	.38	.38	.38	.38	.38	.38	.38
Mar. 18	.27	.41	.46	.47	.47	.47	.47	.47	.47	.47	.47	.55
Apr. 1	.32	.52	.64	.78	.87	.88	.88	.88	.88	.88	.88	.90
Apr. 1	.17	.32	.43	.53	.65	.66	.67	.69	.69	.71	.76	.80
Apr. 4	.20	.34	.47	.57	.77	.89	.94	1.01	1.10	1.18	1.21	1.21
Apr. 6	.34	.36	.44	.45	.45	.46	.46	.46	.46	.46	.49	.51
Apr. 7	.18	.35	.43	.58	.71	.74	.78	.86	.86	.86	.86	.87
Apr. 7	.21	.32	.40	.52	.61	.62	.62	.63	.64	.65	.65	.65
Apr. 28	.36	.67	.84	.93	1.05	1.19	1.31	1.63	1.79	1.80	1.85	2.11
Apr. 30	.27	.48	.69	.89	1.20	1.51	1.68	1.95	2.12	2.22	2.38	2.43
May 2	.18	.31	.38	.42	.44	.46	.50	.58	.59	.62	.66	.70
May 6	.30	.50	.59	.65	.78	.80	.91	.92	1.21	1.24	1.26	1.32
May 13	.27	.52	.70	.86	.99	1.17	1.19	1.33	1.34	1.34	1.34	1.34
May 21	.31	.52	.77	.84	.89	1.07	1.41	1.87	2.04	2.07	2.29	2.41
May 22	.24	.31	.39	.42	.47	.60	.63	.64	.78	.83	.84	1.04
May 22	.30	.52	.68	.69	.71	.73	.79	.81	.82	.84	.87	1.08
May 25	.44	.60	.69	.70	.74	.76	.76	.77	.77	.78	.89	1.35
May 28	.26	.39	.43	.53	.68	.73	.85	.88	1.21	1.27	1.44	1.47
June 1	.33	.53	.63	.74	.94	1.08	1.12	1.13	1.14	1.16	1.29	1.40
June [illegible]	.30	.44	.57	.69	.72	.73	.73	.74	.74	.74	.74	.75
June 13	.21	.36	.47	.53	.57	.70	.72	.77	.82	.83	1.08	1.22
June 17	.21	.33	.35	.46	.52	.52	.52	.52	.64	.87	.87	.88
June 19	.36	.39	.39	.39	.39	.39	.39	.39	.40	.40	.40	.45
June 26	.32	.45	.63	.79	.83	.84	.84	.84	.84	.85	1.08	1.09
July 2	.14	.23	.35	.43	.53	.58	.61	.61	.61	.62	.62	.62
July 6	.30	.40	.44	.47	.58	.63	.65	.66	.67	.69	.70	.70
July 14	.21	.29	.39	.50	.53	.53	.53	.53	.54	.54	.57	.58

Station and date	5	10	15	20	30	45	60	80	100	120	150	180
	Maximum precipitation in inches (5 to 180 minutes)											
PACIFIC AREA (Cont'd.)												
Ponape (Cont'd.)												
July 21	0.16	0.26	0.36	0.49	0.70	0.75	0.75	0.75	0.78	[illegible]	0.80	0.99
Aug. 1	.33	[illegible]	.41	.42	.43	.44	.44	.44	.44	.56	.65	.65
Aug. 7	.15	.22	.31	.42	.52	.78	.97	1.14	1.41	1.54	1.63	1.67
Aug. 11	.20	.34	.41	.41	.47	.75	.75	.75	.76	.94	.94	.94
Aug. 12	.13	.23	.35	.36	.36	.36	.36	.36	.36	.36	.36	.36
Aug. 18	.18	.29	.37	.39	.42	.44	[illegible]	.46	.60	.65	.65	.65
Aug. 21	.26	[illegible]	.44	.46	.48	.50	.57	.59	.60	.61	.61	.63
Aug. 27	.14	.22	.27	.34	.45	.64	.82	.86	.86	.88	.88	.88
Sept. 7	.27	.47	.63	.78	.95	1.05	1.17	1.25	1.29	1.31	1.33	1.33
Sept. 12	.25	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28
Sept. 12	.13	.24	.34	.41	.51	.53	.53	.53	.53	.53	.53	.53
Sept. 15	.27	.32	.32	.32	.32	.32	.32	.35	.35	.35	.35	.35
Sept. 16	.29	.36	.38	.41	.56	.66	.67	.77	.77	.77	.88	1.13
Sept. 17	.22	.35	.37	.38	.39	.39	.39	.39	.39	.40	.42	.42
Sept. 25	.25	.26	.27	.27	.28	.29	.33	.34	.34	.34	.34	.34
Sept. 26	.23	.36	.37	.37	.37	.37	.37	.51	.56	.56	.56	.58
Sept. 28	.23	.34	.38	.42	.48	.54	.76	1.03	1.15	1.18	1.21	1.23
Sept. 29	.42	.66	.81	.92	.96	1.03	1.12	1.19	1.24	1.29	1.35	1.40
Oct. 3	.23	.38	.45	.47	.49	.49	.49	.49	.49	.50	.50	.50
Oct. 7	.26	.36	.38	.43	.49	.64	.84	.87	.89	.89	1.06	1.38
Oct. 7	(.20)	(.36)	(.47)	M	M	(.96)	M	M	M	M	M	(1.54)
Oct. 12	.30	.42	.46	.53	.56	.68	.72	.76	.83	.88	.93	.95
Oct. 13	.29	.47	.63	.82	.97	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Oct. 14	.14	.23	.36	.42	.43	.44	.44	.44	.44	.49	[illegible]	.50
Oct. 18	.15	.29	.38	.42	.47	.49	.50	.52	.53	.54	[illegible]	.55
Oct. 18	.19	.29	.33	.39	(1.00)	(1.01)	(1.02)	(1.02)	(1.02)	(1.02)	(1.02)	[illegible]
Oct. 28	.17	.26	.35	[illegible]	.50	.56	.57	.57	.57	.57	.57	.57
Nov. 1	.20	.30	.35	.45	.46	.46	.46	.46	.46	.46	.46	.46
Nov. 3	.28	.37	.43	.47	.54	.80	.98	1.05	1.12	1.12	1.13	1.13
Nov. 6	.25	.49	.56	.77	1.01	1.20	1.34	1.54	1.61	1.66	1.67	1.68
Nov. 16	.33	.57	.72	.81	.86	.86	.86	.86	.86	.87	.89	.89
Nov. 17	.33	.50	.56	.60	.61	.61	.61	.61	.61	.61	.61	.61
Nov. 20	.31	.58	.80	.88	.92	.92	.92	.99	.99	1.00	1.00	1.20
Nov. 20	.25	.34	.43	.55	.59	.69	.80	1.12	1.24	1.35	1.39	1.39
Nov. 22	.21	.32	.33	.35	.54	.58	.58	.59	.59	.59	.63	.63
Nov. 26	.24	.32	.36	.38	.48	.49	.51	.67	.75	.76	.77	.79
Nov. 26	.33	.43	.49	.49	.49	.49	.49	.49	.49	.54	.54	.54
Dec. 4	.28	.51	.73	.95	1.16	1.23	1.25	1.29	1.30	1.34	1.36	1.36
Dec. 5	.35	.57	.67	.72	.75	.76	.76	.81	.88	1.23	1.25	1.29
Dec. 6	.18	.28	.38	.43	.51	.69	.80	1.01	1.10	1.15	1.16	1.16
Dec. 6	.29	.39	.40	.40	.40	.42	.43	.43	.43	.51	.71	.71
Dec. 7	(.38)	(.57)	(.65)	(.72)	(.79)	(.84)	(.84)	(.84)	(.84)	(.84)	(.84)	(1.28)
Dec. 7	(.28)	(.41)	(.44)	(.52)	(.58)	(.60)	(.72)	(.73)	(.73)	(.73)	(.73)	(1.21)
Dec. 11	.31	.37	.41	.42	.42	.42	.42	.42	.42	.42	.42	.42
Dec. 14	.26	.45	.58	.61	.61	.63	.63	.63	.63	.75	.75	.75
Dec. 15	.15	.25	.35	.47	.70	.87	.98	1.36	1.57	1.67	1.86	1.99
Dec. 19	.24	.43	.59	.74	.98	1.17	1.18	1.24	1.32	1.45	1.51	1.54
Dec. 25	.22	.37	.47	.47	.47	.47	.48	.65	.65	.65	.65	.77
Wake Island AP												
Aug. 13	.26	.39	.45	.51	.64	.70	.70	.70	.70	.70	.70	.70
Aug. 22	.15	.28	.38	.50	.64	.77	.77	.77	.80	.90	.90	.90
Aug. 22	.16	.26	.32	.41	.43	.47	.51	.52	.52	.53	.54	.54
Sept. 11	.33	.58	.81	.91	.96	.97	.98	.99	.99	.99	1.01	1.01
Oct. 7	.27	.38	.59	.80	.96	1.09	1.12	1.16	1.21	1.50	2.31	2.35
Oct. 15	.25	.48	.72	.85	.93	.97	1.04	1.12	1.13	1.14	1.14	1.14
PENNSYLVANIA												
Allentown Airport												
June 4	.11	.20	.26	.30	.47	.67	.79	.84	.89	.93	.98	.98
July 1	.16	.25	.35	.41	.57	.65	.68	.70	.80	.87	.95	1.00
July 3	.20	.33	.43	.44	.48	.55	.59	.59	.59	.59	.59	.59
July 27	.26	.31	.40	.42	.56	.66	.67	.68	.69	.69	.69	.69
July 30	.22	.40	.60	.70	.74	.88	.88	.90	.98	.98	.98	.98
Aug. 8	.18	.30	.39	.44	.53	.56	.61	.62	.65	.65	.65	.65
Aug. 10	.22	.30	.33	.33	.35	.56	.66	.66	.66	.66	.66	.85
Aug. 22	.25	.36	.45	.59	.83	1.13	1.18	1.28	1.30	1.30	1.30	1.30
Aug. 31	.26	.35	.41	.42	.43	.43	.49	.51	.51	.51	.55	.55
Sept. 20	.20	.34	.44	.53	.71	.81	.82	.82	.82	.82	.83	.83
Erie Airport												
July 19	.50	.92	.93	.95	.95	.95	.95	.95	.95	.95	.95	.95
Aug. 7	.25	.34	.40	.43	.46	.46	.46	.46	.46	.46	.65	.69
Harrisburg Airport												
June 4	.21	.40	.43	.45	.53	.61	.62	.62	.62	.62	.62	.62
June 5	.30	.39	.44	.50	.59	.59	.59	.59	.59	.59	.59	.59
Sept. 19	.24	.44	.69	.78	1.03	1.11	1.32	1.35	1.35	1.37	1.38	1.39
Philadelphia AP												
July 14	.49	.88	.92	1.17	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
July 30	.13	.25	.32	.40	.59	.85	.95	1.09	1.20	1.30	1.40	1.56
Aug. 5	.35	.45	.50	.67	.75	.75	.75	.75	.75	.75	.75	.76
Sept. 9	.36	.55	.59	.66	1.00	1.08	1.12	1.13	1.13	1.14	1.18	1.26
Oct. 20	.18	.34	.42	.45	.47	.54	.56	.61	.65	.74	.83	.91
Pittsburgh												
Apr. 26	.23	.31	.33	.33	.34	.34	.34	.34	.34	.34	.34	.34
June 14	.26	.41	.51	.59	.81	.86	.87	.87	.91	.93	.93	.93
June 29	.40	.67	.81	.91	1.06	1.25	1.30	1.40	1.47	1.52	1.54	1.54
Aug. 8	.31	.41	.57	.57	.57	.79	.81	.94	.94	.94	.94	.94
Sept. 4	.50	.64	.77	.81	.84	.90	.90	.90	.90	.90	.90	.90
Pittsburgh AP												
May 29	.22	.36	.44	.55	.74	.79	.81	.81	.81	.81	.81	.81
July 19	.28	.30	.31	.31	.31	.31	.31	.31	.31	.31	.39	.45
Aug. 8	.34	.62	.86	.88	.90	.90	.91	.91	.98	.98	.98	.98
Sept. 4	.16	.26	.33	.40	.40	.40	.41	.49	.49	.49	.49	.49
Reading												
Apr. 4	.34	.51	.55	.55	.55	.55	.55	.55	.55	.55	.55	.56
July 14	.28	.40	.47	.51	.60	.68	.75	.81	.88	[illegible]	.99	1.02
Aug. 22	.16	.26	.37	.38	.59	.60	.61	.62	.62	.62	.62	.62
Aug. 31	.15	.28	.38	.43	.46	.48	.49	.51	.52	.53	.53	.53
Sept. 12	.16	.30	.45	.55	.71	.87	.93	1.01	1.12	1.23	1.46	1.59
Scranton AP												
June 17	.25	.43	.45	.51	.59	.65	.66	.71	.72	.72	.73	.74
July 3	.22	.28	.40	.48	.65	.85	.91	1.03	1.07	1.07	1.07	1.07
July 23	.37	.72	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80
Aug. 5	.24	.27	.30	.49	.49	.49	.49	.49	.49	.49	.49	.49
Sept. 1	.29	.34	.38	.39	.39	.39	.39	.39	.39	.39	.39	.39

M Missing
( ) Estimated

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes) 5	10	15	20	30	45	60	80	100	120	150	180
PUERTO RICO												
San Juan												
Feb. 10	0.40	0.72	0.89	1.03	1.08	1.55	2.01	2.26	2.36	2.76	2.84	2.86
Mar. 23	.25	.45	.61	.61	.61	.61	.62	.62	.62	.62	.79	.79
Apr. 22	.35	.60	.67	.67	.70	.72	.73	.73	.73	.77	.78	.78
June 15	.25	.45	.55	.70	.80	.81	.81	.81	.81	.81	.81	.81
July 18	.20	.40	.50	.54	.60	.62	.64	.81	1.06	1.42	1.42	1.42
Aug. 13	.35	[illegible]	.90	1.07	1.12	1.50	1.55	1.60	1.64	1.67	1.68	1.83
[illegible] 2	.45	.60	.90	.94	1.44	1.46	1.56	1.56	1.57	1.57	1.57	1.57
[illegible]	[illegible]	.49	.60	.84	1.07	1.07	1.07	1.08	1.40	1.40	1.42	1.42
[illegible] 1	.16	.31	.41	[illegible]	.59	.62	.62	.63	.63	.63	.63	.63
San Juan AP												
Feb. 10	.35	.41	.86	.96	1.10	1.18	1.22	1.29	1.32	1.33	1.39	1.40
Feb. 1[illegible]	[illegible]	.18	.51	.51	[illegible]	.52	.52	.52	.52	.52	.59	.82
Feb. 14	.19	.35	.46	[illegible]	[illegible]	.55	.55	.59	.59	.59	.59	.59
Apr. 10	.13	.23	.28	.40	.52	.54	.54	.57	.57	.57	.57	.57
May 8	.51	.88	1.16	[illegible]	[illegible]	1.58	1.58	1.61	1.61	1.61	1.61	1.61
May [illegible]	[illegible]	.47	.55	[illegible]	[illegible]	.55	.55	.55	.55	.55	.55	.55
May 29	.42	.76	1.00	[illegible]	1.68	2.40	2.60	2.65	2.65	2.65	2.65	2.65
June [illegible]	.26	.40	[illegible]	.45	.48	.75	.78	.82	.86	1.14	1.32	1.38
June 22	.28	.35	.44	.45	.46	.46	.46	.47	.47	.47	.47	.47
July 18	.14	.25	.36	.46	.52	.56	.57	.64	.66	.80	.86	.86
Aug. 1	.28	.46	.60	.69	.75	.75	.81	.89	.96	1.02	1.02	1.05
Aug. 13	.34	[illegible]	.63	.66	.70	.72	.76	.85	.86	.90	.95	.99
Aug. 14	.18	.31	.45	.51	.55	.57	.60	.63	.64	.65	.67	.68
Aug. 20	.20	.36	.40	.41	.41	.41	.41	.41	.41	.41	.41	.41
Sept. 13	.20	.31	.41	.47	.49	.49	.49	.49	.49	.49	.49	.49
Sept. 20	.32	[illegible]	.40	.44	.48	.48	.48	.48	.48	.48	.48	.48
Sept. 24	.20	[illegible]	.42	.46	.50	.52	.53	.53	.53	.53	.53	.53
Oct. 4	[illegible]	[illegible]	.58	.60	.63	.64	.64	.64	.74	.76	1.05	1.07
Oct. 13	.37	.68	.93	1.05	1.24	1.32	1.32	1.32	1.32	1.32	1.32	1.32
Dec. 4	.26	.38	.46	.60	.96	1.12	1.26	1.32	1.42	1.46	1.46	1.46
RHODE ISLAND												
Providence AP												
Sept. 20	.21	.33	.40	.42	.47	.60	.69	.81	.96	1.03	1.13	1.26
SOUTH CAROLINA												
Charleston												
Jan. 30	.23	.38	.48	.56	.70	.83	.87	.94	1.01	1.03	1.11	1.25
May 25	.49	.80	.89	.91	.93	.95	.97	1.01	1.04	1.04	1.04	1.04
June 3	.18	.30	.37	.39	.41	.42	.48	.69	.71	.72	.81	.89
June 6	.18	.31	.42	.51	.56	.56	.73	.77	.77	.77	.77	.77
July 7	.25	.31	.37	.49	.66	.67	.79	1.10	1.11	1.12	1.12	1.12
July 14	.16	.27	.31	.41	.58	.88	.97	1.01	1.04	1.09	1.18	1.20
July 16	.34	.60	.85	1.15	1.62	2.07	2.13	2.27	2.36	2.42	2.45	2.45
July 27	.24	.40	.55	.68	.72	.74	.74	.74	.74	.74	.74	.74
July 28	.37	.51	.55	.57	.59	.60	.60	.61	.61	.61	.61	.61
Aug. 1	.38	.55	.63	.69	.77	.78	.78	.79	.81	.81	.81	.81
Aug. 9	.28	.35	.44	.49	.52	.56	.56	.56	.61	.61	.61	.61
Aug. 23	.31	.42	.48	.57	.87	1.08	1.08	1.39	1.63	1.68	1.72	1.74
Sept. 8	.20	.30	.32	.36	.58	.59	.59	.71	.72	.72	.72	.72
Sept. 11	.34	.47	.60	.67	.76	.82	.88	.95	1.02	1.17	1.56	1.67
Sept. 11	.39	.51	.60	.64	.68	.73	.79	.95	1.00	1.05	1.30	1.48
Sept. 30	.24	.34	.36	.37	.44	.72	.79	.81	.81	.82	.82	.91
Oct. 7	.22	.30	.34	.42	.44	.44	.45	.46	.47	.47	.47	.47
Oct. 7	[illegible]	.38	.40	.40	.41	.44	.44	.44	.44	.44	.44	.44
Columbia AP												
Mar. 29	.16	.25	.35	.45	.50	.59	.61	.66	.74	.83	1.07	1.16
Mar. 30	.15	.25	.35	.46	.50	.80	.88	1.05	1.30	1.60	1.69	1.77
Apr. 27	.21	.40	.55	.74	.77	.80	.80	.82	.85	.91	.91	.93
May 8	.15	.21	.25	.30	.45	.70	.80	.80	.82	.83	.83	.84
July 1	.27	.54	.58	.59	.59	.59	.59	.59	.75	.77	.87	.87
July 3	.35	.60	.80	.96	1.05	1.15	1.19	1.22	1.22	1.22	1.22	1.22
July 28	.15	.25	.40	.50	.65	.71	.75	.81	.85	.88	.92	1.00
Aug. 3	.33	.44	.60	[illegible]	.90	1.35	[illegible]	1.71	1.74	1.74	1.74	1.74
Aug. [illegible]	.20	.34	.37	.38	.39	.40	.40	.40	.40	.40	.40	.40
Aug. 8	.18	.36	.48	.49	.50	.50	.50	.50	.50	.50	.50	.52
Aug. 22	.25	.45	.54	.58	.72	.89	.93	1.00	1.01	1.02	1.04	1.05
Sept. 29	.31	.59	.70	[illegible]	1.18	1.35	1.43	1.69	1.72	1.80	1.82	1.82
Oct. 9	.22	.35	.41	.46	.47	.47	.47	.47	.51	.51	.51	.51
Florence												
June 4	.52	.60	.75	[illegible]	[illegible]	1.05	1.19	1.19	1.19	1.19	1.19	1.19
June 7	[illegible]	.56	.68	.88	1.02	1.04	1.05	1.05	1.06	1.06	1.06	1.06
June 19	[illegible]	.32	[illegible]	.41	[illegible]	[illegible]	.90	.91	.91	.91	.93	.94
June 26	[illegible]	[illegible]	[illegible]	.41	[illegible]	[illegible]	[illegible]	1.14	1.16	1.17	1.17	1.17
July 1	.45	.52	[illegible]	.61	.69	.72	.72	[illegible]	.78	.78	.82	.82
July 2	.27	[illegible]	.58	.71	.83	.86	.91	.92	.92	.92	.92	.92
July 1	.35	.45	.65	.75	.75	.75	.75	.75	.75	.75	.75	.75
July 6	.30	.40	.60	.70	1.05	1.45	1.57	1.60	1.64	1.72	1.75	1.75
July 7	.26	.35	.46	.62	.64	.64	.65	.65	.65	.65	.65	.65
July 14	.24	.32	.33	.42	.47	.60	.70	.70	.70	.71	.72	.75
July 28	.40	.65	.83	1.10	1.26	1.40	1.55	[illegible]	1.70	1.78	2.03	2.06
July 28	.17	.32	.53	.60	.66	.70	.90	1.02	1.15	1.22	1.30	1.39
Aug. 11	.36	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45
Oct. 7	.35	.57	.75	.82	.98	1.14	1.24	1.30	1.31	1.31	1.31	1.31
Greenville AP												
July 6	.50	.88	1.18	1.30	1.50	1.59	1.63	1.89	1.95	1.96	1.96	1.96
Aug. 10	.32	.55	.74	.76	.86	.86	.86	.86	.86	.86	.94	1.01
Aug. 12	.29	.36	.37	.37	.37	.37	.37	.37	.37	.39	.43	.47
Aug. 15	.29	.38	.39	.39	.41	.43	.47	.63	.63	.63	.63	.63
Aug. 21	.34	.46	.59	.64	.88	.89	.90	.90	.90	.90	.90	.90
Sept. 10	.27	.49	.72	.89	.98	.99	.99	.99	.99	.99	.99	.99
Sept. 11	.29	.31	.35	.35	.36	.37	.37	.38	.38	.38	.38	.38
Oct. [illegible]	.35	.42	.43	.44	.47	.61	.64	.68	.71	.73	.73	.73
Spartanburg AP												
June 3	.32	.40	.44	.47	.48	.65	.71	.72	.74	.74	.74	.74
June 23	.40	.58	.68	.78	1.00	1.11	1.15	1.21	1.23	1.24	1.25	1.25
Aug. 2	.43	.80	1.00	1.04	1.13	1.16	1.42	1.42	1.42	1.42	1.42	1.42
Aug. 10	.40	.80	1.07	1.17	1.33	1.35	1.38	1.38	1.38	1.38	1.38	1.38
Aug. 1[illegible]	.45	.52	.52	.52	.52	.52	.52	.52	.52	.52	.52	.52
Aug. 12	.24	.32	.33	.39	.57	.57	.57	.57	.57	.57	.98	.99
Sept. 1	.22	.35	.38	.39	.39	.39	.40	.40	.42	.52	.58	.60
Sept. 7	.24	.43	.50	.60	.78	1.10	1.52	1.90	1.93	1.94	1.95	1.95
Sept. 11	.20	.37	.54	.71	.86	.98	1.08	1.25	1.30	1.32	1.32	1.32
Oct. 4	.33	.42	.50	.51	.51	.51	.54	.54	.54	.54	.54	.54
Oct. 4	.27	.37	.45	[illegible]	.56	.56	.56	.56	.56	.56	.56	.56
Oct. [illegible]	.25	.41	.52	.61	.67	.71	.72	.72	.77	.78	.88	.92
Oct. 6	.23	.34	.38	.52	.52	.52	.52	.52	.52	.52	.52	.52

Station and date	Maximum precipitation in inches (5 to 180 minutes) 5	10	15	20	30	45	60	80	100	120	150	180
SOUTH DAKOTA												
Huron Airport												
Aug. 5	0.22	0.32	0.38	0.41	0.47	0.55	0.64	0.65	0.70	0.70	0.70	0.71
Aug. 25	.33	.57	.77	.99	1.24	1.52	1.65	1.72	1.75	1.79	1.89	1.93
Rapid City AP												
May 23	.55	.95	1.15	1.20	1.22	1.24	1.25	1.27	1.29	1.31	1.33	1.33
June 20	.60	.87	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Sioux Falls AP												
Aug. 25	.25	.34	.41	.42	.55	.64	.70	.73	.78	.78	.84	.88
TENNESSEE												
Bristol AP												
June 12	.20	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33
June 14	.27	.38	.44	.45	.45	.45	.45	.45	.45	.45	.45	.45
June 16	.22	.36	.42	.48	.52	.58	.64	.70	.77	.80	.82	.85
July 1	.45	.65	.71	.71	.72	.72	.73	.75	.79	.82	.95	1.02
July 14	.40	.75	.90	.90	.90	.90	.90	.90	.90	.90	.91	.92
July 23	.25	.45	.50	.60	.65	.68	.70	.74	.77	.79	.80	.80
Aug. 7	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27
Aug. 19	.50	.82	.95	1.20	1.55	1.88	2.08	2.10	2.11	2.12	2.13	2.14
Oct. 3	.25	.40	.52	.60	.65	.68	.70	.80	.83	.91	.98	.99
Chattanooga AP												
Apr. 30	.30	.59	.66	.70	.72	.72	.72	.73	.73	.73	.73	.73
June 16	.20	.32	.38	.44	.67	.70	.71	.73	.74	.74	.75	.75
June 24	.45	.78	1.01	1.16	1.29	1.59	1.74	1.74	1.79	1.80	1.81	1.82
Knoxville AP												
June 4	.17	.30	.42	.44	.44	.44	.44	.44	.44	.44	.65	.76
July 10	.27	.50	.60	.69	.76	.85	.88	.90	.93	.96	.98	.99
Oct. 8	.44	.76	.82	.83	.83	.83	.83	1.00	1.02	1.02	1.05	1.10
Memphis AP												
Feb. 10	.29	.44	.54	.57	.70	.77	.80	.84	.87	.89	.90	.92
Mar. 29	.25	.31	.41	.50	.57	.61	.67	.67	.67	.68	.68	.68
Apr. 29	.22	.36	.42	.44	.48	.51	.56	.77	.99	1.03	1.14	1.19
May 6	.66	.83	.86	.88	.94	1.00	1.06	1.12	1.19	1.26	1.32	1.34
May 19	.32	.38	.49	.60	.69	.77	.79	.80	.80	.82	.83	.84
June 16	.45	.55	.56	.58	.60	.63	.63	.63	.64	.64	.65	.65
June 24	.28	.50	.70	.83	1.08	1.29	1.37	1.40	1.42	1.44	1.45	1.46
June 26	.22	.30	.38	.45	.53	.58	.60	.61	.62	.64	.65	.67
June 26	.17	.31	.42	.46	.51	.55	.70	.76	.79	.80	.81	.86
July 1	.21	.36	.41	.42	.42	.42	.42	.42	.42	.42	.42	.42
July 14	.31	.48	.56	.66	.71	.71	.72	.72	.72	.72	.72	.72
Aug. 4	.33	.48	.51	.51	.52	.52	.52	.65	.65	.66	.67	.67
Aug. 17	.41	.56	.66	.72	.77	.89	1.05	1.09	1.11	1.11	1.12	1.12
Aug. 19	.39	.75	1.03	1.20	1.31	1.38	1.43	1.46	1.50	1.52	1.56	1.58
Aug. 20-21	.31	.56	.72	.96	1.24	1.63	1.82	2.04	2.12	2.29	2.48	2.63
Sept. 8	.41	.63	.69	.69	.70	.70	.71	.71	.71	.71	.71	.71
Sept. 10	.24	.37	.40	.42	.43	.45	.46	.46	.47	.51	.63	.72
Oct. 30	.24	.33	.35	.42	.48	.50	.50	.58	.59	.59	.59	.59
Nov. 15-16	.17	.20	.27	.33	.44	.60	.76	1.03	1.18	1.21	1.24	1.26
Nov. 28	.18	.26	.36	.46	.61	.80	.83	.85	.88	.90	.91	.95
Nashville AP												
Mar. 30	.30	.42	.52	[illegible]	.71	.80	.83	.83	.83	.83	.83	.83
May 26	.24	.37	.44	.48	.58	.59	.74	1.04	1.19	1.20	1.21	1.22
June 2	.42	.52	.80	.85	.96	.98	.99	.99	.99	.99	.99	.99
June 10	.38	.48	.52	.54	.75	.98	.98	.98	.98	.98	.98	.98
June 16	.32	.37	.61	.77	.96	1.11	1.29	1.31	1.51	1.62	1.73	1.78
June 17	.10	.16	.26	.34	.52	.78	.99	1.03	1.06	1.12	1.29	1.37
Aug. 9	.25	.38	.39	.39	.39	.39	.39	.40	.43	.46	.48	.48
Sept. 10	.26	.38	.48	.54	.60	.74	.80	.84	.85	.86	.87	.95
TEXAS												
Abilene												
Apr. 25	.31	.50	.55	.62	.69	.83	.85	1.03	1.05	1.13	1.24	1.24
May 29	.32	.60	.71	.72	.76	.76	.76	.76	.76	.88	.95	.99
June 7	.32	.54	.76	.98	1.01	1.02	1.04	1.05	1.08	1.09	1.09	1.09
July 5	.25	.44	.56	.71	.99	1.27	1.42	1.46	1.46	1.69	2.48	2.55
Aug. 19	.19	.37	.54	.67	.84	1.00	1.24	1.40	1.46	1.48	1.52	1.58
Oct. 13	.23	.46	.48	.60	.74	1.02	1.32	1.61	1.82	1.84	1.84	1.84
Amarillo AP												
Apr. 12	.45	.55	.58	.61	.75	.81	.96	1.30	1.34	1.35	1.36	1.40
June 9	.85	1.04	1.24	1.47	1.69	2.01	M	M	M	M	M	M
June 10	.42	.76	.92	1.00	1.02	1.08	1.23	1.42	1.53	1.58	1.66	1.75
July 20	.26	.36	.38	.43	.47	.54	.55	.56	.57	.57	.57	.57
Aug. 10	.18	.25	.33	.46	.56	.72	.75	.76	.82	.85	.93	.98
Aug. 16	.50	.52	.53	.53	.53	.53	.53	.53	.53	.53	.53	.53
Aug. 18	.25	.34	.36	.38	.39	.39	.39	.45	.52	.53	.53	.53
Sept. 8	.44	.72	1.00	1.20	1.55	1.80	1.88	1.92	1.95	2.00	2.05	2.08
Sept. 23	.36	.44	.58	.74	.78	.83	.88	.92	.97	.98	.98	.98
Austin AP												
June 25	.14	.24	.31	.37	.52	.64	.64	.74	.79	.80	.82	.86
July 20	.43	.68	.74	.77	.79	.81	.82	.85	.85	.87	.90	.90
July 20	.21	.29	.37	.41	.44	.46	.46	.46	.46	.46	.46	.46
Aug. 27	.18	.29	.39	.44	.49	.51	.51	.51	.51	.51	.51	.51
Sept. 24	.17	.31	.38	.45	.49	.50	.51	.53	.54	.60	.62	.62
Oct. 5	.26	.35	.37	.37	.37	.51	.51	.51	.68	.68	.68	.68
Oct. 16	.19	.31	.48	.57	.71	.86	.93	1.17	1.29	1.34	1.47	1.54
Oct. 18	.26	.46	.58	.66	.76	.84	.86	.88	.95	.97	.98	.98
Oct. 28	.20	.32	.36	.38	.47	.47	.61	.70	.79	.80	.80	.90
Oct. 28	.53	.65	.96	1.16	1.56	2.09	2.15	2.15	2.15	2.15	2.63	3.56
Oct. 28-29	.33	.65	.90	1.16	1.56	2.09	2.61	3.11	3.15	3.53	3.60	3.80
Brownsville AP												
Feb. 12	.32	.48	.54	.59	.62	.65	.66	.66	.66	.67	.68	.68
Apr. 17	.15	.26	.32	.39	.50	.71	.88	.98	1.01	1.05	1.13	1.19
Apr. 26	.20	.31	.39	.43	.46	.57	.73	.83	.90	.93	1.03	1.07
May 20	.30	.50	.72	.88	1.07	1.36	1.45	1.48	1.48	1.48	1.48	1.48
June 24	.40	.64	.90	1.06	1.19	1.28	1.32	1.32	1.33	1.33	1.38	1.40
June 25	.40	.64	.73	.83	1.16	1.42	1.43	1.47	1.47	1.47	1.47	1.47
Aug. 13	.22	.40	.54	.61	.73	.77	.79	.80	.80	.80	.80	.80
Sept. 3	.27	.37	.42	.46	.49	.55	.55	.55	.55	.55	.55	.55
Oct. 17	.20	.39	.59	.73	.95	1.45	1.76	1.85	1.85	1.86	1.90	1.90
Corpus Christi AP												
Mar. 26	.22	.36	.48	.55	.78	.88	.96	1.03	1.08	1.11	1.14	1.17
Apr. 17	.15	.25	.33	.40	.56	.67	.69	.69	.69	.71	.86	.91
Apr. 25	.26	.52	.69	.78	.82	1.29	1.40	1.46	1.46	1.46	1.46	1.46

M Missing

EXCESSIVE SHORT DURATION RAINFALL

YEAR 1960

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
TEXAS (Cont'd.)												
Corpus Christi AP (Cont'd.)												
May 3	0.26	0.44	0.54	0.57	0.61	0.61	0.62	0.62	0.62	0.63	0.63	0.64
June 23	.28	.44	.56	.68	.87	.93	1.13	1.26	1.30	1.42	1.80	2.13
July 17	.22	.44	.54	.55	.56	.56	.56	.60	.72	.93	.93	.93
Aug. 13	.21	.38	.53	.66	.87	.98	1.04	1.08	1.52	1.84	2.07	2.15
Sept. 1	.21	.36	.53	.56	.57	.57	.57	.57	.57	.57	.57	.57
Oct. 5	.25	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40
Oct. 16	.39	.76	1.00	1.32	1.82	2.81	3.49	4.03	4.37	4.65	4.95	5.10
Oct. 17	.42	.65	.78	.86	.98	1.13	1.16	1.32	1.39	1.43	1.50	1.53
Dec. 28	.17	.31	.44	.54	.71	.96	1.16	1.57	1.78	2.02	2.56	2.85
Dallas AP												
Apr. 9	.23	.33	.37	.38	.39	.39	.44	.45	.50	.50	.50	.50
Apr. 24	.38	.62	.66	.69	.73	.79	.84	.93	.98	1.01	1.04	1.17
May 5	.25	.45	.63	.70	.76	.77	.77	.77	.77	.77	.77	.79
June 13	.35	.42	.45	.46	.47	.48	.49	.50	.50	.50	.50	.50
July 13	.93	1.46	1.88	2.31	2.90	3.13	3.76	3.93	4.01	4.01	4.01	4.03
July 14	.12	.24	.33	.37	.50	.57	.60	.64	.64	.64	.64	.64
July 28	.17	.30	.45	.55	.75	.95	1.10	1.17	1.19	1.23	1.25	1.25
Aug. 10	.20	.30	.37	.41	.47	.53	.58	.62	.63	.66	.69	.70
Aug. 21	.27	.42	.46	.48	.50	.55	.64	.70	.76	.79	.80	.81
Aug. 21	.27	.53	.60	.65	.70	.71	.72	.73	.73	.73	.73	.73
Sept. 9	.43	.64	.82	.93	.94	.95	.96	.96	.99	1.22	1.22	1.22
Oct. 13	.25	.44	.65	.73	1.00	1.30	1.43	1.95	2.54	2.59	2.64	2.73
Dec. 6	.27	.43	.55	.64	.75	.98	1.21	1.34	1.62	1.76	2.00	2.16
El Paso AP												
July 8	.16	.30	.42	.50	.66	.90	1.02	1.11	1.19	1.26	1.33	1.36
Aug. 18	.18	.34	.45	.47	.49	.49	.49	.49	.49	.49	.49	.49
Ft. Worth Airport												
Apr. 25	.25	.30	.34	.35	.36	.37	.42	.45	.49	.50	.54	.61
May 5	.35	.47	.48	.49	.51	.51	.51	.51	.51	.52	.64	.65
July 6	.27	.48	.55	.82	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
July 18	.38	.64	.85	.93	1.07	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Aug. 21	.25	.37	.50	.50	.51	.52	.52	.52	.52	.52	.52	.52
Oct. 13	.40	.72	.86	1.00	1.17	1.25	1.27	1.29	1.34	1.36	1.43	1.46
Galveston												
Aug. 10	.12	.24	.31	.42	.48	.74	.74	.74	.74	.74	.74	.74
Aug. 13	.31	.42	.45	.45	.45	.45	.46	.47	.47	.47	.47	.47
Aug. 14	.27	.48	.68	.75	.89	1.05	1.20	1.30	1.47	1.54	1.56	1.56
Sept. 4	.26	.41	.46	.58	.73	.82	.82	.82	.82	.82	.82	.82
Oct. 14	.26	.34	.44	.49	.66	.91	.95	.96	.98	.99	1.02	1.08
Oct. 18	.26	.36	.41	.55	.68	.86	89	.91	.92	.92	.95	1.01
Oct. 29	.32	.46	.56	.75	.93	1.15	1.21	1.34	1.36	1.36	1.43	1.44
Oct. 30	.25	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32
Nov. 9	.23	.38	.45	.48	.48	.48	.48	.48	.48	.48	.48	.48
Houston												
Feb. 3	.26	.40	.44	.47	.51	.55	.57	.63	.70	.75	.80	.91
Feb. 17	.43	.49	.52	.53	.53	.54	.54	.54	.54	.54	.54	.54
Apr. 29	.15	.28	.41	.54	.70	.88	1.08	1.22	1.25	1.26	1.26	1.29
June 24	.75	1.30	1.62	1.81	1.99	2.28	2.44	2.64	2.73	2.93	3.08	3.18
June 25	.30	.42	.42	.42	.44	.46	.57	.63	.75	.84	.93	.99
June 26	.27	.43	.57	.65	.85	1.20	1.45	2.03	2.23	2.57	3.07	3.77
July 14	.20	.36	.47	.56	.68	.79	.81	.83	.84	.84	.84	.84
July 20	.60	1.08	1.39	1.51	1.57	1.60	1.60	1.60	1.60	1.60	1.60	1.60
July 31	.50	.90	1.21	1.46	1.85	2.24	2.27	2.27	2.27	2.27	2.27	2.27
Aug. 19	.18	.32	.42	.48	.51	.52	.52	.52	.52	.52	.52	.52
Aug. 29	.34	.50	.71	.97	1.09	1.11	1.11	1.11	1.11	1.11	1.26	1.26
Aug. 30	.40	.46	.49	.51	.53	.54	.54	.54	.55	.55	.55	.55
Sept. 5	.39	.50	.58	.69	.92	.99	1.02	1.02	1.02	1.02	1.02	1.02
Oct. 5	.34	.63	.80	.85	.96	1.32	1.64	2.15	2.64	2.70	2.73	2.74
Oct. 7	.25	.31	.33	.36	.36	.38	.38	.38	.38	.38	.38	.38
Oct. 14	.26	.45	.57	.69	.93	1.02	1.04	1.20	1.64	1.81	1.98	2.00
Oct. 18	.31	.36	.36	.37	.37	.37	.40	.41	.41	.42	.43	.44
Oct. 18	.28	.49	.68	.86	1.22	1.38	1.45	1.46	1.52	1.60	1.72	1.76
Oct. 29	.31	.57	.83	.90	1.09	1.37	1.43	1.46	1.49	1.50	1.53	1.53
Nov. 9	.26	.34	.46	.50	.52	.85	.92	.98	.99	.99	1.03	1.03
Laredo Airport												
Apr. 30	.30	.55	.68	.70	.78	.78	.78	.78	.78	.78	.78	.78
May 17	.40	.60	.82	1.14	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
July 16	.20	.30	.32	.33	.33	.36	.55	.59	.60	.61	.62	.82
Aug. 10	.27	.40	.55	.72	.75	.77	.78	.78	.78	.78	.79	.79
Aug. 11	.15	.29	.41	.46	.56	.59	.61	.61	.61	.63	.63	.64
Sept. 3	.20	.30	.31	.32	.33	.33	.33	.33	.33	.33	.33	.33
Sept. 24	.40	.68	.83	1.06	1.08	1.08	1.09	1.09	1.09	1.09	1.09	1.09
Nov. 21	.25	.40	.47	.50	.75	.83	.90	1.02	1.03	1.05	1.11	1.16
Dec. 6	.15	.21	.26	.31	.43	.66	.86	1.02	1.11	1.34	1.46	1.50
Lubbock												
June 4	.23	.41	.58	.77	1.00	1.11	1.13	1.14	1.15	1.16	1.16	1.16
June 11	.16	.28	.43	.50	.56	.57	.64	.67	.93	.98	1.02	1.51
Midland Airport *												
Aug. 10	.29	.49	.55	.81	.85	.88	.88	.90	.91	.91	.91	.91
Aug. 15	.18	.32	.42	.54	.67	.81	1.09	1.10	1.10	1.10	1.10	1.10
Oct. 17	.34	.39	.52	.54	.56	.59	.61	.63	.64	.64	.65	.65
Oct. 17	.32	.52	.61	.71	.76	.82	.84	.84	.84	.85	.85	.85
Port Arthur AP												
Feb. 3	.52	.84	.98	1.02	1.06	1.14	1.20	1.30	1.52	1.72	1.85	1.97
Apr. 25	.19	.34	.41	.47	.52	.52	.52	.52	.52	.52	.53	.53
Apr. 29	.50	.76	.89	.93	1.10	1.29	1.44	1.69	1.93	2.08	2.16	2.17
June 24	.26	.47	.56	.61	.63	.65	.65	.76	.77	.77	.77	.77
July 14	.25	.43	.55	.65	.72	.77	.79	.85	.90	.95	1.01	1.05
July 18	.48	.83	1.05	1.21	1.32	1.46	1.59	1.64	1.67	1.72	1.77	1.89
July 19	.38	.62	.74	.75	.76	.80	.83	.85	.86	.86	.86	.86
July 30	.26	.45	.59	.75	.87	.88	.88	.88	.88	.88	.88	.88
Aug. 1	.23	.35	.42	.50	.63	.64	.64	.64	.64	.64	.64	.64
Aug. 10	.20	.33	.49	.66	.81	.84	.85	.86	.86	.86	.86	.86
Aug. 11	.23	.43	.59	.65	.76	.77	.78	.79	.82	.93	.97	1.00
Aug. 14	.43	.82	1.16	1.54	2.20	3.09	3.77	4.20	4.68	4.98	5.42	5.88
Aug. 28	.17	.30	.42	.43	.44	.45	.58	.59	.59	.59	.59	.59
Sept. 3	.28	.36	.36	.36	.36	.36	.36	.36	.36	.39	.39	.39
Sept. 24	.18	.26	.36	.40	.45	.55	.68	.93	.95	.99	1.01	1.01
Oct. 7	.24	.47	.63	.76	.92	.97	1.01	1.05	1.09	1.11	1.11	1.11
Oct. 18	.41	.63	.76	.86	1.12	1.32	1.39	1.46	1.53	1.57	1.62	1.72
Oct. 26	.19	.26	.34	.42	.44	.44	.44	.44	.44	.44	.45	.45
Oct. 29	.25	.45	.52	.55	.67	.79	.84	.91	.99	1.04	1.10	1.17
Dec. 27	.19	.30	.35	.38	.65	.72	.84	.88	.96	1.03	1.07	1.08

* Weighing Rain Gage inoperative
April 1 - July 20.

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
TEXAS (Cont'd.)												
San Angelo												
July 20	0.22	0.39	0.52	0.61	0.73	0.73	0.75	0.80	0.82	0.82	0.82	0.82
Oct. 16	.61	1.12	1.32	1.44	1.64	1.92	1.98	2.00	2.14	2.18	2.19	2.19
San Antonio AP												
Apr. 29	.47	.57	.60	.74	.84	.88	.97	.99	1.02	1.06	1.09	1.13
Aug. 15	.39	.52	.72	.93	1.38	1.85	2.44	2.96	3.43	3.67	4.11	4.44
Oct. 14	.23	.32	.38	.42	.45	.45	.51	.51	.51	.51	.51	.54
Oct. 16	.33	.64	.87	1.05	1.41	1.65	1.90	1.98	2.07	2.19	2.30	2.36
Oct. 17	.20	.33	.36	.40	.47	.50	.53	.53	.53	.53	.53	.53
Victoria												
Feb. 3	.23	.32	.43	.48	.52	.55	.60	.62	.65	.68	.73	.78
June 24	.25	.48	.65	.90	1.05	1.23	1.25	1.47	1.50	1.60	1.67	1.72
June 25	.25	.30	.30	.30	.30	.30	.33	.33	.33	.33	.53	.59
June 25	.20	.32	.40	.48	.55	.59	.59	.87	1.17	1.17	1.17	1.17
July 18	.53	1.00	1.42	1.62	1.95	2.14	2.21	2.23	2.26	2.29	2.30	2.38
Aug. 13	.20	.35	.45	.50	.63	.73	1.05	1.13	1.14	1.14	1.14	1.14
Aug. 14	.30	.50	.60	.62	.62	.62	.62	.62	.62	.62	.62	.62
Aug. 29	.34	.63	.83	.88	.98	1.43	1.56	1.73	1.82	1.97	2.00	2.23
Oct. 6	.40	.65	.85	.85	.88	.90	.93	.94	.94	.94	.94	.94
Oct. 16	.25	.50	.65	.70	1.05	1.45	2.10	2.40	2.90	3.00	3.13	3.22
Oct. 18	.40	.60	.95	1.15	1.60	2.15	3.10	3.43	4.10	4.65	5.58	6.15
Waco Airport												
Apr. 29	.23	.46	.59	.70	.80	.82	.87	.88	1.11	1.41	1.47	1.48
May 20	.16	.30	.42	.46	.55	.95	1.20	1.32	1.35	1.38	1.42	1.47
July 7	.17	.30	.40	.47	.50	.51	.51	.51	.51	.51	.51	.51
Aug. 15	.26	.27	.28	.29	.30	.30	.31	.31	.31	.31	.31	.31
Aug. 21	.27	.54	.80	1.05	1.33	1.65	1.73	1.83	1.85	1.85	1.85	1.85
Oct. 13	.15	.27	.35	.50	.63	.80	.95	1.12	1.15	1.15	1.16	1.18
Oct. 18	.25	.50	.73	.95	1.18	1.52	1.68	1.74	1.84	1.94	2.01	2.08
Wichita Falls												
Apr. 13	.21	.25	.42	.44	.46	.46	.46	.46	.46	.46	.46	.46
May 4	.21	.42	.50	.59	.64	.96	1.02	1.02	1.02	1.02	1.02	1.02
May 15	.17	.27	.42	.54	.59	.59	.59	.59	.59	.59	.59	.59
July 7	.20	.40	.50	.53	.57	.59	.61	.64	.66	.67	.68	.68
July 20	.18	.34	.46	.56	.70	.75	.75	.76	.76	.76	.76	.76
Sept. 24	.17	.32	.45	.56	.73	.93	1.13	1.17	1.19	1.22	1.28	1.28
Sept. 26	.40	.58	.64	.65	.66	.67	.68	.71	.85	.88	.89	.90
Oct. 4	.20	.32	.34	.34	.35	.37	.50	.66	.80	.86	.92	.96
Oct. 15	.16	.26	.36	.40	.41	.52	.74	.80	.84	.85	.85	.87
Oct. 18	.36	.41	.50	.53	.60	1.00	1.03	1.05	1.16	1.18	1.23	1.28
UTAH												
Milford AP						None						
Salt Lake City AP						None						
VERMONT												
Burlington AP												
May 14	.17	.27	.34	.41	.49	.56	.64	.75	.81	.86	.94	1.01
June 17	.34	.53	.58	.61	.69	.82	.85	.88	.96	1.02	1.15	1.17
Aug. 22	.37	.44	.48	.48	.48	.48	.48	.48	.48	.48	.48	.48
Sept. 30	.24	.31	.44	.44	.47	.51	.51	.51	.51	.51	.51	.51
VIRGINIA												
Lynchburg AP												
June 19	.40	.65	.80	.95	1.20	1.35	1.38	1.38	1.38	1.38	1.38	1.38
July 27	.33	.41	.43	.45	.46	.46	.46	.47	.47	.48	.49	.49
Aug. 31	.30	.44	.60	.63	.64	.65	.65	.67	.71	.75	.79	.81
Norfolk AP												
Jan. 3	.14	.25	.34	.41	.51	.69	.75	.76	.76	.80	.82	.88
Feb. 11	.26	.44	.52	.58	.64	.70	.74	.78	.82	.85	.89	.90
May 28	.16	.30	.34	.37	.39	.40	.42	.46	.46	.71	.76	.87
June 3	.22	.38	.55	.70	.74	.77	.81	.82	.82	.83	.83	.83
July 27	.22	.34	.46	.57	.63	.74	.89	.99	1.03	1.08	1.14	1.24
Aug. [illegible]	.32	.52	.70	.91	1.07	1.11	1.13	1.13	1.15	1.17	1.17	1.17
Aug. 10	.31	.53	.66	.82	.89	.92	.94	1.01	1.02	1.02	1.03	1.03
Aug. 12	.23	.40	.55	.61	.81	.87	.95	1.03	1.24	1.81	1.99	2.04
Aug. 22	.17	.31	.33	.36	.36	.37	.37	.37	.37	.37	.37	.37
Sept. 5	.35	.61	.76	.86	.95	1.00	1.03	1.03	1.03	1.03	1.03	1.19
Sept. 12	.16	.24	.32	.42	.58	.85	1.13	1.46	1.80	2.09	2.23	2.54
Richmond Airport												
May 30	.38	.59	.71	.75	.75	.75	.75	.75	.75	.75	.75	.75
July 23	.32	.58	.68	.71	.82	.89	1.02	1.07	1.07	1.07	1.07	1.07
July 27	.16	.28	.38	.43	.54	.63	.66	.71	.76	.81	.81	.85
July 31	.40	.59	.67	.80	.90	1.11	1.24	1.37	1.57	1.59	1.63	1.64
Aug. 7	.20	.32	.42	.44	.44	.44	.44	.44	.44	.44	.44	.44
Aug. 10	.52	.94	1.28	1.56	2.03	2.60	2.72	2.84	2.85	2.85	2.85	2.85
Aug. 31	.25	.40	.49	.60	.72	.85	.90	.99	1.03	1.04	1.15	1.23
Sept. 10	.23	.40	.51	.70	.93	1.20	1.25	1.29	1.31	1.37	1.46	1.50
Sept. 11	.21	.36	.44	.50	.60	.71	.81	.89	.99	1.05	1.11	1.15
Roanoke Airport												
May 27	.20	.32	.44	.54	.72	.88	.95	.96	1.10	1.18	1.19	1.19
May 27	.18	.30	.34	.41	.68	1.18	1.22	1.28	1.32	1.34	1.34	1.35
Aug. 6	.28	.44	.45	.50	.50	.51	.54	.56	.57	.57	.57	.57
Aug. 7	.14	.28	.36	.46	.54	.65	.65	.65	.65	.65	.65	.65
Sept. 6	.19	.36	.38	.39	.39	.39	.39	.39	.39	.39	.39	.39
Oct. 9	.25	.43	.60	.75	.96	1.06	1.08	1.10	1.12	1.14	1.17	1.18
WASHINGTON												
Spokane Airport						None						
Stampede Pass						None						
Tatoosh Island						None						
Walla Walla						None						
Yakima Airport						None						
WEST VIRGINIA												
Charleston AP												
June 5	.40	.50	.59	.68	.69	.69	.71	.71	.71	.71	.71	.71
June 12	.21	.42	.50	.60	.64	.75	.75	.75	.75	.75	.75	.75

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
WEST VIRGINIA (Cont'd.)												
Charleston AP (Cont'd.)												
June 12	0.30	0.40	0.40	0.40	0.41	0.41	0.41	0.42	0.42	0.42	0.42	0.42
July 1	.35	.52	.62	.65	.69	.73	.77	.80	.85	.85	.90	.99
July 10	.22	.42	.44	.56	.60	.72	.84	.85	.86	.88	.91	1.00
July 26	.25	.30	.32	.32	.33	.33	.33	.33	.36	.36	.36	.42
July 30	.35	.58	.60	.61	.61	.61	.61	.61	.61	.62	.62	.63
Aug. 7	.45	.70	.77	.87	1.01	1.03	1.08	1.08	1.10	1.12	1.17	1.17
Aug. 15	.17	.33	.36	.36	.36	.36	.36	.36	.36	.36	.36	.36
Huntington												
Feb. 10	.25	.29	.31	.32	.35	.38	.40	.45	.47	.50	.60	.64
June 11	.35	.60	.75	.77	.78	.78	.78	.82	1.20	1.22	1.26	1.42
June 12	.20	.34	.36	.37	.41	.42	.42	.42	.42	.42	.42	.42
June 12	.20	.32	.45	.59	.64	.67	.68	.68	.68	.68	.68	.68
July 1	.15	.25	.35	.42	.65	.74	.82	.87	.97	1.03	1.09	1.14
July 10	.20	.35	.40	.45	.65	.75	.87	.97	1.00	1.03	1.06	1.06
Aug. 7	.40	.70	.90	1.10	1.40	1.54	1.55	1.70	1.71	1.72	1.72	1.72
Aug. 10	.30	.44	.47	.50	.57	.67	.68	.70	.71	.71	.71	.71
Parkersburg												
June 12	.43	.60	.73	.75	.83	.85	.88	.88	.89	.89	.89	.89
June 22	.30	.50	.55	.58	.69	.77	.85	.89	.89	.89	.89	1.14
June 30	.40	.55	.68	.90	1.00	1.03	1.04	1.07	1.07	1.07	1.07	1.07
WISCONSIN												
Green Bay AP												
Mar. 30	.15	.30	.33	.48	.65	.70	.75	.82	.84	.87	.89	.96
June 23	.16	.29	.38	.49	.54	.62	.62	.63	.64	.65	.77	.92
June 27	.30	.33	.35	.36	.43	.47	.47	.47	.47	.47	.47	.47
Sept. 8	.29	.32	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
La Crosse AP												
May 16	.64	.99	1.41	1.71	2.09	2.16	2.16	2.17	2.22	2.22	2.22	2.22
June 1	.32	.55	.61	.63	.64	.64	.95	.96	.96	.96	.98	1.12
June 16	.27	.36	.42	.45	.47	.70	.75	.80	.95	1.01	1.06	1.07
Aug. 3	.39	.50	.55	.57	.59	.61	.65	.73	.75	.76	.76	.76
Aug. 28	.43	.84	.97	1.06	1.22	1.35	1.50	1.53	1.59	1.65	1.75	1.78
Madison Airport												
Mar. 29	.14	.25	.35	.49	.67	.72	.98	.98	.99	1.02	1.04	1.07
WISCONSIN (Cont'd.)												
Madison Airport (Cont'd.)												
July 2	0.33	0.55	0.73	0.87	1.15	1.17	1.33	1.36	1.36	1.46	1.93	2.46
July 22	.30	.37	.52	.55	.60	.73	.75	.75	.75	.75	.99	1.21
Aug. 3	.31	.42	.46	.48	.49	.53	.55	.59	.63	.65	.65	.65
Aug. 9	.19	.29	.35	.49	.69	1.01	1.12	1.31	1.35	1.43	1.56	1.56
Milwaukee AP												
Mar. 29	.26	.31	.34	.38	.50	.68	.77	.90	.94	.94	.94	.94
May 16	.26	.40	.49	.51	.57	.62	.66	.68	.76	.80	.80	.80
June 16	.20	.36	.52	.64	.75	.86	.88	.88	.88	.88	.88	.88
July 12	.22	.32	.44	.49	.52	.56	.60	.63	.64	.64	.66	.66
July 25	.18	.34	.44	.50	.54	.57	.61	.67	.71	.85	.91	1.01
Aug. 2	.46	.88	1.08	1.30	1.55	1.93	2.06	2.53	2.66	2.68	2.68	2.79
Aug. 9	.18	.32	.38	.42	.58	.86	.98	1.00	1.06	1.06	1.10	1.10
Aug 19	.31	.34	.36	.39	.40	.46	.55	.57	.60	.62	.64	.65
WYOMING												
Casper Airport						None						
Cheyenne Airport												
June 11	.24	.32	.35	.35	.35	.56	.67	.73	.75	.76	.76	.76
July 4	.23	.33	.36	.37	.38	.38	.38	.39	.39	.39	.39	.39
Lander Airport						None						
Sheridan Airport												
Aug. 15	.32	.47	.50	.50	.52	.53	.53	.53	.53	.53	.53	.53
DELAYED DATA												
Washington, D. C. AP												
May 30	.22	.31	.41	.47	.53	.53	.53	.53	.53	.53	.53	.53
June 13	.36	.42	.45	.46	.66	.70	1.01	1.18	1.25	1.35	1.36	1.39
June 23	.32	.60	.67	.68	.68	.68	.68	.68	.68	.68	.68	.68
July 27	.30	.38	.43	.48	.52	.53	.54	.54	.54	.54	.54	.54
Aug. 3	.28	.54	.73	.88	.92	.95	.97	.98	.98	.98	.98	.98
Aug. 4	.17	.30	.35	.41	.50	.53	.56	.59	.61	.61	.61	.61
Aug. 5	.30	.48	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56
Sept. 9	.20	.30	.35	.37	.38	.38	.39	.40	.40	.40	.40	.40
Oct. 20	.12	.23	.35	.41	.50	.53	.56	.57	.58	.61	.67	.72
Valdosta, Ga. AP												
Mar. 31	.27	.38	.46	.51	.57	.65	.70	.76	.88	.94	1.01	1.05

SUNSHINE, AMOUNT AND PERCENT

YEAR 1960

Station	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible
ALABAMA																										
Birmingham	112	35	155	48	185	50	262	67	318	73	305	71	332	76	268	64	235	63	231	66	197	63	162	53	2762	61
Montgomery	155	49	178	55	226	61	271	70	319	75	306	72	274	63	246	60	236	64	237	67	185	59	146	47	2779	62
ALASKA																										
Anchorage	67	33	66	25	248	67	187	42	239	44	299	52	222	39	197	40	115	30	101	33	65	30	33	19	1839	40
Juneau	38	17	81	30	123	33	184	42	206	40	84	15	97	18	150	32	53	14	38	12	48	20	41	20	1143	25
Nome	39	23	48	19	262	72	308	69	337	58	195	31	227	37	127	25	115	29	83	28	46	24	18	14	1805	40
ARIZONA																										
Phoenix	298	94	296	93	352	95	376	96	420	98	409	95	415	95	402	97	358	96	286	81	279	89	278	90	4169	94
Prescott	255	81	230	72	317	85	337	86	385	89	389	90	348	79	329	79	318	86	232	66	224	72	267	87	3631	81
Tucson	254	79	276	86	347	93	371	95	415	97	382	89	334	77	326	79	329	89	314	89	249	79	262	84	3859	87
Yuma	275	86	269	84	341	92	366	94	419	98	419	98	417	96	370	90	340	92	303	86	243	77	279	89	4041	91
ARKANSAS																										
Ft. Smith	127	41	159	50	193	52	250	64	253	58	240	55	256	58	286	69	269	72	199	57	188	61	143	47	2563	57
Little Rock	107	34	137	43	190	51	274	70	292	67	289	67	315	71	293	70	268	72	188	54	157	51	119	39	2629	59
CALIFORNIA																										
Eureka (U)	96	32	176	57	113	30	175	44	239	53	263	58	213	47	217	51	140	37	182	53	117	39	168	58	2099	47
Fresno	229	74	169	54	274	74	330	84	421	96	438	100	426	95	419	100	363	97	324	93	172	56	154	51	3719	83
Los Angeles (U)	238	75	225	71	272	73	324	83	346	80	302	70	396	90	350	84	324	87	291	83	234	75	283	92	3585	80
Red Bluff	117	39	226	73	229	62	310	78	368	83	437	97	447	98	420	99	356	95	311	90	164	55	168	58	3553	80
Sacramento	141	46	210	67	223	60	326	82	370	84	444	100	442	98	421	100	355	95	329	95	168	55	145	49	3574	80
San Diego	218	68	214	67	214	58	293	75	267	62	213	50	349	80	323	78	312	84	278	79	198	63	261	84	3140	70
San Francisco (U)	139	45	210	67	231	62	334	84	372	84	301	68	290	65	295	70	247	66	247	71	153	50	172	58	2991	67
COLORADO																										
Denver	231	77	198	64	272	73	258	65	291	65	346	77	336	74	328	77	294	79	253	73	223	74	225	77	3255	73
Grand Junction	183	60	181	58	279	75	333	84	324	73	399	90	409	90	394	93	334	90	272	78	220	73	248	84	3576	80
Pueblo	264	87	188	60	273	74	302	76	348	79	368	83	358	80	358	85	291	78	275	79	255	84	191	65	3471	78
CONNECTICUT																										
Hartford	183	62	173	47	214	58	206	51	236	52	281	62	299	65	267	62	209	56	218	64	185	63	188	64	2659	59
New Haven	153	52	197	64	252	68	334	59	244	54	285	63	339	74	351	82	227	61	223	65	201	68	209	73	3015	65
DISTRICT OF COLUMBIA																										
Washington Nat'l. Airport	139	46	162	52	231	62	297	75	210	47	292	65	298	66	261	62	229	61	188	54	193	64	196	67	2696	60
FLORIDA																										
Apalachicola (U)	185	57	217	67	260	70	305	79	327	77	327	78	249	58	261	64	270	73	288	90	247	77	245	77	3181	72
Jacksonville	186	57	201	64	254	68	273	71	284	67	212	50	182	42	208	51	125	34	281	79	215	67	207	65	2628	60
Key West	248	74	248	76	295	79	287	75	270	65	241	59	285	68	296	73	199	54	220	61	249	75	221	67	3059	69
Lakeland (U)	256	78	171	52	260	70	284	74	320	76	239	57	245	58	250	62	156	42	248	70	231	71	229	71	2889	65
Miami (U)	253	76	222	68	243	65	284	74	286	69	223	54	263	63	270	67	176	48	187	52	238	73	218	67	2863	65
Pensacola (U)	162	50	215	67	215	58	261	67	272	64	306	72	253	59	238	58	235	63	240	68	192	60	180	57	2769	62
Tampa	239	73	235	72	255	69	295	77	329	78	298	71	263	62	201	49	186	50	237	67	275	85	220	68	3033	68
GEORGIA																										
Atlanta	144	46	163	51	191	51	249	64	324	75	263	61	283	65	246	59	211	60	227	65	202	65	175	56	2678	60
Macon	174	55	167	52	211	57	260	67	333	77	288	67	255	58	230	55	225	61	237	67	187	59	219	70	2786	62
Savannah	173	54	196	61	224	60	287	74	352	82	316	74	306	71	276	63	220	59	239	68	210	66	201	64	3000	66
HAWAII																										
Hilo	87	25	119	36	130	35	86	23	123	30	147	37	178	44	113	28	118	32	162	45	66	20	163	48	1492	34
Honolulu	204	60	214	64	267	72	298	79	313	77	330	82	336	82	338	85	292	80	269	74	228	68	206	61	3295	74
Lihue	243	72	227	68	154	41	182	48	251	61	288	71	292	71	247	62	228	62	217	60	171	51	138	41	2638	59
IDAHO																										
Boise	135	46	164	54	186	50	266	66	295	65	400	87	402	86	391	90	353	94	254	75	118	40	188	67	3152	70
Pocatello	91	31	163	53	223	60	288	72	343	76	389	85	383	82	361	83	326	87	265	72	148	51	195	69	3175	71
ILLINOIS																										
Cairo (U)	117	38	142	45	228	61	297	75	298	68	254	58	280	63	358	85	295	79	228	65	215	70	173	58	2885	65
Chicago (Midway)	113	38	108	35	201	54	260	65	259	57	235	52	275	60	216	50	180	48	191	56	134	45	150	53	2322	52
Moline	159	54	114	37	191	52	221	55	192	43	232	51	358	78	297	69	258	69	215	62	160	54	199	69	2596	58
Peoria	120	40	120	39	193	52	223	56	192	43	248	55	326	71	303	71	245	65	214	62	170	57	176	61	2530	57
Springfield	111	37	133	43	195	53	241	61	214	48	251	56	341	75	311	73	281	75	217	63	197	66	160	55	2652	59
INDIANA																										
Evansville	100	33	103	33	232	63	295	75	273	62	321	72	353	78	339	80	294	79	218	63	196	64	163	55	2887	65
Ft. Wayne	132	44	163	53	286	77	280	70	289	64	333	74	381	83	272	64	200	54	238	69	117	39	157	54	2848	64
Indianapolis	135	45	140	45	256	69	270	68	234	53	255	57	342	75	326	77	289	77	224	65	217	72	175	60	2863	64
IOWA																										
Burlington	151	51	148	48	259	70	259	65	260	58	297	66	382	84	384	90	289	77	272	79	210	70	198	69	3109	70
Des Moines	152	51	175	57	180	48	236	59	259	57	*232	51	*337	73	339	79	282	75	228	66	192	65	201	70	2813	63
Sioux City	168	57	178	58	175	47	267	67	289	64	284	62	404	87	314	73	302	81	250	73	198	67	187	66	3016	67
KANSAS																										
Concordia (U)	170	56	179	57	191	52	280	70	337	76	265	59	315	69	355	84	305	82	261	75	232	74	207	71	3097	69
Dodge City	184	60	170	54	235	63	317	80	329	75	297	67	315	70	318	75	305	82	224	64	261	87	186	63	3111	70
Topeka	143	47	155	50	136	37	221	56	303	68	202	45	276	61	320	76	284	76	221	64	215	71	202	69	2678	60
Wichita	157	51	160	51	177	48	236	60	285	65	257	58	241	54	289	69	284	76	220	63	305	76	197	66	2808	61
KENTUCKY																										
Louisville	82	27	108	34	204	55	235	59	209	47	262	59	240	53	237	56	221	59	163	47	186	61	162	55	2309	51
LOUISIANA																										
New Orleans (U)	123	38	145	45	196	53	211	54	246	58	372	88	268	62	197	48	271	73	211	59	191	60	126	40	2557	57
Shreveport	164	51	178	55	171	46	277	71	338	79	366	86	352	81	287	69	295	80	250	71	178	56	159	51	3015	68
MAINE																										
Portland	148	51	155	51	214	58	205	51	253	55	340	74	353	76	304	70	232	62	192	56	134	46	188	67	2718	60
MARYLAND																										
Baltimore	154	51	205	66	207	56	262	66	243	55	320	72	312	69	279	66	208	56	176	51	160	53	155	53	2681	60
MASSACHUSETTS																										
Blue Hill Obs. (R)	133	46	141	48	180	50	183	47	214	49	281	64	302	68	232	56	204	57	188	57	157	56	#184	67	2399	55
Boston	174	59	184	60	218	59	211	53	244	54	322	71	337	73	285	66	230	61	220	64	200	68	202	71	2827	63
Nantucket	123	41	182	59	238	64	217	54	243	54	253	56	325	71	210	49	190	51	201	58	[illegible]	52	168	59	2505	56
MICHIGAN																										
Alpena	71	25	121	40	196	53	137	34	178	39	259	56	319	68	286	66	183	49	167	49	64	22	110	40	2091	47
Detroit	48	16	68	22	186	50	170	42	179	40	277	61	326	70	270	63	238	63	196	57	112	38	130	46	2200	49
Escanaba (U)	91	32	135	45	244	66	172	42	226	49	280	60	301	63	262	60	188	50	148	44	91	32	116	43	2254	50
Grand Rapids	56	19	124	41	243	66	194	48	238	52	276	60	375	81	271	63	196	52	150	44	87	30	105	37	2315	52
Lansing	99	34	81	26	188	51	169	42	225	50	298	65	372	80	292	68	225	60	166	49	114	39	132	47	2361	53
Marquette (U)	116	41	108	36	215	58	175	43	252	54	338	71	357	75	330	75	210	56	171	51	85	30	109	40	2466	55
Sault Ste. Marie	63	22	142	47	237	64	164	40	194	42	287	61	323	68	311	71	170	45	125	37	77	27	88	33	2181	49

See reference notes at end of table.

SUNSHINE, AMOUNT AND PERCENT

YEAR 1960

Station	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible
MINNESOTA																										
Duluth	124	44	195	65	231	63	191	47	258	55	300	63	376	79	264	60	190	50	184	55	123	43	157	59	2593	58
Minneapolis	138	48	193	64	216	58	182	45	212	46	269	58	336	71	246	57	211	56	238	70	144	50	161	58	2546	57
MISSISSIPPI																										
Jackson	124	39	134	42	159	43	264	68	314	73	318	74	335	77	201	49	226	61	194	55	174	55	130	42	2573	57
Vicksburg (U)	133	42	134	42	153	41	270	69	338	79	350	82	349	80	221	53	251	68	203	57	198	63	126	40	2726	60
MISSOURI																										
Columbia	135	44	144	46	223	60	208	52	325	73	*233	52	337	75	300	71	279	75	199	57	215	71	179	61	2777	62
Kansas City	131	43	133	43	173	47	243	61	339	77	288	65	318	70	302	71	257	69	236	68	270	89	225	76	2915	65
St. Louis	114	38	136	43	197	53	236	59	240	54	299	67	341	76	312	74	267	72	193	56	191	63	135	46	2661	60
Springfield	117	38	165	52	205	55	230	58	265	60	188	43	370	60	360	86	300	81	188	54	216	70	155	52	2759	60
MONTANA																										
Billings	143	50	179	59	265	71	226	56	313	68	268	57	384	81	329	75	300	80	219	64	148	52	180	66	2954	66
Great Falls	177	64	178	60	315	85	224	55	249	53	328	69	401	83	311	71	315	84	235	70	181	65	151	57	3065	68
Havre (U)	150	55	152	51	226	61	253	61	263	56	328	68	442	91	301	68	318	84	208	62	127	46	102	39	2870	64
Helena	181	65	198	66	285	77	243	60	308	66	381	81	429	90	344	79	308	82	187	55	155	55	159	59	3178	71
Missoula	75	27	123	41	167	45	184	45	214	46	320	67	436	91	258	59	267	71	153	45	106	38	81	31	2384	53
NEBRASKA																										
Lincoln (U)	185	62	147	47	170	46	284	71	313	70	293	65	373	81	352	83	308	82	251	73	208	70	192	67	3076	68
North Platte	186	62	112	36	154	42	248	62	282	63	272	60	347	76	325	76	280	75	251	73	217	73	199	69	2873	64
Omaha	147	50	168	54	142	38	247	62	295	66	253	56	369	80	297	69	261	70	253	73	223	75	182	63	2837	63
Valentine	199	68	167	55	223	60	230	57	297	65	287	62	389	84	355	82	278	74	269	79	198	68	213	76	3105	69
NEVADA																										
Ely	200	66	232	74	315	85	290	73	378	85	410	92	356	79	395	93	312	83	281	81	223	74	264	90	3656	82
Las Vegas	267	86	254	80	324	87	347	88	402	92	415	95	408	92	386	92	327	88	288	82	233	76	258	86	3909	87
Reno	118	39	239	76	308	83	353	89	389	87	442	99	383	84	396	93	357	96	313	91	193	64	239	82	3730	84
Winnemucca	62	21	113	36	133	36	229	57	233	52	368	81	277	60	380	89	291	78	242	70	96	32	190	67	2614	59
NEW HAMPSHIRE																										
Concord	158	54	175	57	214	58	187	47	235	52	310	67	326	70	274	63	209	56	204	59	158	54	197	70	2647	59
Mt. Washington Obs. (R)	113	38	87	29	138	37	163	40	234	50	214	46	172	39	223	51	196	51	156	45	86	29	105	37	1887	41
NEW JERSEY																										
Atlantic City (U)	148	49	159	51	227	61	292	73	244	55	‡299	71	275	61	195	46	191	51	204	59	173	58	173	59	2580	--
Trenton (U)	161	54	176	57	246	66	298	75	301	67	302	67	332	73	265	62	212	57	224	65	217	72	195	67	2929	65
NEW MEXICO																										
Albuquerque	228	73	200	63	291	78	283	72	349	80	337	78	341	77	357	86	308	83	264	75	261	84	216	71	3435	77
NEW YORK																										
Albany	158	54	164	54	241	65	232	58	210	46	309	65	310	67	268	62	208	55	209	61	146	50	162	57	2617	58
Binghamton	93	31	88	29	183	49	192	48	146	32	285	63	276	60	245	57	227	61	213	62	136	46	124	43	2208	48
Buffalo	61	21	68	22	197	53	192	48	183	40	320	70	353	76	296	69	263	70	225	66	113	39	84	30	2355	50
New York (U)	151	51	171	56	250	67	259	65	247	55	304	67	337	74	323	76	208	56	211	61	199	67	195	68	2855	64
New York Central Park Obs.	171	57	196	63	259	70	264	66	234	52	261	58	279	61	225	53	202	54	198	57	180	60	166	58	2635	59
Rochester	98	34	105	34	251	68	185	46	195	43	341	74	385	83	330	77	251	67	211	62	132	45	125	45	2609	57
Syracuse	82	28	84	27	221	60	170	42	190	42	323	70	324	70	269	62	190	51	174	51	97	33	89	32	2213	47
NORTH CAROLINA																										
Asheville (U)	136	44	165	52	195	53	260	66	288	66	231	53	193	44	190	45	191	51	154	44	177	57	190	62	2370	53
Cape Hatteras (R)	-	-			245	66	297	76	294	68	280	65	245	56	235	56	230	62	190	54	217	70	214	70	----	--
Charlotte	139	44	---	61	234	63	282	72	324	75	298	68	296	67	260	62	219	59	217	62	210	68	224	73	----	65
Greensboro	150	48	219	69	240	65	306	78	327	75	315	72	308	69	288	69	247	66	226	65	219	71	226	75	3071	69
Raleigh	139	45	202	64	213	57	307	78	289	66	238	54	278	62	247	59	218	59	192	55	214	70	231	76	2768	62
Wilmington	150	47	207	65	204	55	233	60	340	79	319	74	212	48	252	61	246	66	248	71	215	69	231	75	2857	64
NORTH DAKOTA																										
Bismarck	124	44	127	42	165	45	259	63	361	77	347	73	419	88	341	78	314	83	231	68	131	46	115	43	2934	66
Devils Lake (U)	162	59	210	71	218	59	255	62	326	69	308	64	379	78	267	60	271	72	235	70	148	53	131	50	2910	65
Fargo	139	50	189	63	201	54	206	51	285	61	234	49	375	78	293	67	214	57	193	57	109	39	103	39	2541	57
Williston (U)	131	48	146	49	195	53	207	51	281	60	311	65	361	75	304	69	312	83	205	61	142	51	262	38	2857	60
OHIO																										
Cincinnati Obs.	77	25	70	23	176	47	251	63	216	49	306	71	341	75	315	74	245	66	187	54	173	57	171	58	2528	55
Cleveland	37	12	46	15	160	43	209	52	241	54	334	74	305	66	251	59	164	44	200	58	121	41	111	39	2179	46
Columbus	99	33	45	14	186	50	210	53	185	41	315	70	354	78	330	78	231	62	195	56	110	37	102	35	2362	51
Dayton	95	32	94	30	268	72	252	63	231	52	322	72	365	80	318	75	251	67	224	65	164	55	158	54	2742	60
Sandusky (U)	80	27	113	37	236	64	232	58	258	57	330	73	387	84	339	79	246	65	226	66	136	46	142	49	2725	59
Toledo	82	28	114	37	196	53	186	46	199	44	273	60	359	78	323	75	291	78	258	75	189	64	169	59	2639	58
OKLAHOMA																										
Oklahoma City	146	47	176	55	175	47	222	57	282	65	329	76	283	64	354	85	286	77	231	66	187	60	168	55	2839	67
Tulsa	110	35	139	44	156	42	179	46	228	52	289	66	225	51	290	69	277	74	198	57	199	64	165	54	2455	55
OREGON																										
Portland	37	13	111	37	114	31	136	34	163	35	329	70	378	80	233	53	219	58	138	41	112	39	84	31	2054	46
Roseburg	34	12	94	31	123	33	151	38	186	41	421	92	437	94	343	80	287	77	148	43	108	37	58	21	2390	53
PACIFIC AREA																										
Guam (Taguac) (R)	138	39	200	59	216	58	212	57	208	53	238	61	197	50	110	28	143	39	121	33	112	32	111	31	2006	45
Johnston Island	249	72	235	72	273	73	312	83	399	86	346	88	352	89	329	84	261	71	269	74	199	58	155	46	3379	75
Koror	177	48	68	20	---	--	202	55	167	43	145	38	204	53	171	45	150	41	140	38	---	--	237	65	----	--
Majuro	253	69	242	70	280	75	184	50	189	49	---	--	---	--	---	--	---	--	---	--	---	--	---	--	----	--
Ponape	182	50	173	50	179	48	144	39	162	42	201	53	250	65	215	56	194	53	177	48	217	61	166	46	2260	51
Truk	200	55	127	40	220	59	-	-	162	42	107	30	215	64	251	66	246	68	223	60	178	50	179	49	----	--
Yap	270	75	267	78	328	88	313	84	239	62	173	45	216	58	143	37	197	54	81	22	110	30	69	19	2406	54
PENNSYLVANIA																										
Harrisburg	173	58	182	59	210	57	221	55	191	43	279	62	302	66	248	58	173	46	179	52	189	63	202	70	2549	57
Philadelphia	153	51	189	61	230	62	283	71	214	48	314	70	311	68	256	60	205	55	202	58	168	56	186	64	2711	60
Pittsburgh (U)	73	24	82	26	171	46	298	75	177	40	293	65	278	61	205	49	190	51	162	47	101	34	69	24	2099	54
Pittsburgh	143	48	108	35	267	72	235	59	209	47	320	71	322	70	302	71	225	60	235	68	178	60	160	55	2704	61
Reading (U)	134	45	148	48	234	63	240	60	209	47	284	63	256	56	197	46	207	55	236	68	164	55	168	58	2477	55
Scranton	96	32	120	39	232	63	218	54	203	45	303	67	276	60	258	60	198	53	196	57	139	47	150	52	2389	52
PUERTO RICO																										
San Juan (Isla Verde)	274	79	274	82	224	60	169	45	199	49	174	44	189	46	177	45	125	34	242	67	219	63	165	48	2431	55
RHODE ISLAND																										
Providence	161	55	174	57	210	57	207	52	253	56	284	62	330	72	244	57	205	55	208	61	177	60	206	72	2659	60
SOUTH CAROLINA																										
Charleston	224	70	232	73	255	69	305	78	347	81	341	79	261	61	292	70	250	67	226	64	197	63	249	80	3179	71
Columbia	172	54	223	70	233	63	285	73	337	78	302	70	288	65	270	65	232	62	227	65	223	71	227	74	3019	68
Greenville	156	50	174	55	216	58	294	75	322	74	244	56	260	59	289	69	209	56	242	69	229	74	211	69	2846	64

See reference notes at end of table.

SUNSHINE, AMOUNT AND PERCENT

YEAR 1960

Station	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible
SOUTH DAKOTA																										
Huron	130	45	172	56	212	57	251	62	326	71	302	65	394	84	327	75	280	75	262	77	196	68	164	59	3016	67
Rapid City	120	42	167	55	207	56	230	57	262	57	280	60	317	70	332	77	300	80	259	76	167	58	114	41	2755	62
TENNESSEE																										
Chattanooga	127	41	154	49	170	46	264	67	303	70	274	63	311	71	245	59	233	63	199	57	195	63	162	53	2637	59
Knoxville	117	38	138	44	178	48	244	62	245	56	179	41	242	55	211	50	194	52	134	38	104	34	149	49	2135	47
Memphis	117	37	156	49	178	48	287	73	340	78	301	69	348	79	287	69	285	77	200	57	213	69	156	51	2868	63
Nashville	87	28	98	31	174	47	276	70	304	70	284	65	319	72	286	68	243	65	192	55	194	63	143	47	2600	57
TEXAS																										
Abilene	212	67	206	64	199	54	276	71	326	76	372	87	328	75	309	75	277	75	222	63	205	65	156	50	3088	69
Amarillo	226	72	206	65	267	72	337	86	348	80	335	77	344	78	373	90	327	88	266	76	282	91	187	61	3498	78
Austin	130	40	170	53	176	47	221	57	281	66	328	78	341	79	263	64	301	81	202	57	137	43	139	44	2689	60
Brownsville	95	29	181	55	142	38	213	56	230	55	335	81	376	89	312	77	259	70	201	56	158	48	110	34	2612	59
Corpus Christi	127	39	214	66	182	49	226	59	266	63	337	81	368	87	263	65	297	80	192	54	166	51	123	38	2761	62
Dallas	159	50	163	51	175	47	231	59	299	70	321	75	305	70	274	66	269	72	207	59	172	55	143	46	2718	61
El Paso	248	77	255	79	324	87	347	89	386	90	376	88	309	71	327	79	323	87	296	84	269	85	233	74	3693	83
Galveston (U)	132	40	184	57	189	51	239	62	308	73	348	83	362	85	211	52	306	83	205	58	183	57	131	41	2798	63
Houston (U)	134	41	174	54	164	44	195	51	326	77	341	81	340	78	193	47	270	73	186	52	172	54	143	45	2638	59
Port Arthur	120	37	173	53	165	44	228	59	304	72	327	78	320	74	187	46	270	73	170	48	152	48	118	37	2534	57
San Antonio	112	35	171	53	172	46	198	51	263	62	318	76	313	73	250	61	312	84	183	52	123	38	123	39	2538	57
UTAH																										
Salt Lake City	102	34	163	53	226	61	308	77	361	80	393	87	384	84	363	85	315	84	262	76	147	49	†202	70	3226	72
VERMONT																										
Burlington	132	46	120	39	216	58	198	49	253	55	333	72	311	66	290	67	205	55	200	59	98	34	135	49	2491	54
VIRGINIA																										
Lynchburg	141	46	184	58	259	70	306	78	301	68	318	72	300	67	252	60	201	54	193	55	207	68	186	62	2848	63
Norfolk	160	52	216	69	239	64	292	74	276	63	262	60	259	65	195	47	220	59	210	60	218	71	217	72	2764	62
Richmond	140	45	201	64	244	66	311	79	300	68	344	78	312	70	269	64	224	60	186	53	187	61	192	65	2910	64
WASHINGTON																										
Seattle (U)	53	20	118	39	151	41	187	46	120	26	283	59	375	78	153	35	176	47	155	46	111	40	84	32	1966	44
Spokane	70	25	130	44	209	56	229	56	247	53	372	78	450	93	290	66	301	80	184	55	135	48	85	32	2702	60
Tatoosh Island (R)	58	14	131	44	146	40	148	36	113	23	145	30	*278	57	168	38	*236	63	110	33	78	28	101	39	1712	38
Walla Walla (U)	105	37	173	57	218	58	221	54	297	64	398	85	436	92	313	72	303	81	199	59	87	31	39	15	2789	62
WEST VIRGINIA																										
Parkersburg (U)	74	24	61	20	148	40	210	53	182	41	261	58	284	63	206	49	196	52	189	54	114	38	130	44	2055	45
WISCONSIN																										
Green Bay	90	31	120	39	209	57	168	42	180	39	236	51	285	61	242	56	167	44	159	44	118	41	136	49	2110	47
Madison	103	35	133	43	204	55	197	49	196	43	236	51	345	74	277	64	227	61	196	57	151	52	191	68	2456	55
Milwaukee	108	37	124	40	196	53	227	56	226	50	245	53	359	77	243	56	220	59	223	65	151	51	197	70	2519	56
WYOMING																										
Cheyenne	156	53	135	44	227	61	251	63	310	69	314	69	317	69	316	74	269	72	240	70	169	57	189	66	2893	65
Lander	188	64	210	68	281	76	249	62	318	70	339	74	332	72	382	89	278	74	241	70	183	63	226	80	3227	73
Sheridan	180	63	168	56	251	68	242	60	322	70	292	63	351	75	327	75	270	72	215	63	165	57	174	63	2957	66

Data from airport unless otherwise specified.
"U" indicates Urban, "R" indicates Rural, sites.
* Estimated.
† New Record, old mark 68% in 1944.
# From Campbell-Stokes recorder uncorrected for low sun.
‡ Data from airport station from June.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:00a E. S. T.	7:00a E. S. T.	1:00p E. S. T.	7:00p E. S. T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
ALABAMA																																				
Birmingham	72.3	50.9	61.6	98	Jul. 26	13	Dec. 22+	3209	40.76	2.64	Mar. 2	2.3	2.3	Feb. 13	83	88	58	64	7.9	N	59	SE	Feb. 4	61	6.0	98	125	143	109	1	48	3	76	0	63	0
Huntsville	71.1	49.1	60.1	99	Sep. 7+	8	Feb. 15	3715	50.65	3.50	Mar. 2-3	10.6	6.2	Feb. 13-14	81	85	57	63	7.1	SE	*37	E	Feb. 4	--	6.0	104	109	153	110	4	41	22	86	5	89	0
Mobile	75.7	55.8	65.8	97	Jul. 22	20	Dec. 22	2053	58.53	3.56	May 6-7	T	T	Dec. 14+	84	86	56	67	9.7	N	*46	S	Jul. 5	--	5.8	103	131	132	120	0	81	52	77	0	30	0
Montgomery	74.7	53.7	64.2	98	Jul. 2	16	Dec. 22	2649	48.15	2.28	Mar. 29-30	T	T	Dec. 14+	80	85	55	62	8.3	N	47	SW	Jan. 14	62	5.8	106	119	141	117	0	60	29	85	0	43	0
ALASKA																																				
Anchorage	43.9	30.0	37.0	80	Jul. 12+	-23	Jan. 13+	10162	14.51	1.20	Sep. 11	46.3	7.3	Nov. 27-28	72	78	74	64	7.9	NNE	*30	SE	Apr. 22	40	7.8	39	71	256	98	13	1	29	#11	109	189	17
Annette	51.5	41.4	46.5	90	Aug. 8	24	Dec. 17+	6710	144.15	4.48	Apr. 3-4	49.4	8.6	Mar. 6-7	83	85	79	74	10.6	SE	*58	SSE	Jan. 30	--	8.4	31	44	288	237	15	1	9	#14	0	52	0
Barrow	13.4	2.8	8.1	75	Jul. 11	-45	Jan. 14	20784	4.51	.83	Aug. 10	26.1	3.7	Apr. 24-25	73	74	74	72	13.3	E	*58	W	Mar. 1	--	---	c63	c51	c184	103	4	0	98	#1	279	340	176
Barter Island	14.7	5.0	9.9	68	Jul. 18	-45	Jan. 16+	20139	4.06	.30	Jul. 14-15	36.5	7.2	Oct. 8	79	80	79	79	14.3	ENE	*75	W	Mar. 4	--	---	k54	k48	k212	108	11	0	79	#0	264	325	159
Bethel	36.6	21.0	28.8	83	Jul. 14+	-33	Jan. 13	13147	18.97	1.01	Jul. 23-24	60.8	5.1	Dec. 20	77	84	81	72	14.3	NNE	*55	S	Sep. 26	--	7.4	59	68	239	157	23	2	70	#15	147	227	78
Cold Bay	42.6	33.1	37.9	77	Jul. 13	2	Feb. 14	9825	38.50	2.53	Nov. 5-6	77.9	8.4	Dec. 5-6	83	87	85	78	16.2	SSE	*64	ESE	Dec. 15	--	8.8	7	57	302	224	21	0	19	#4	55	160	0
Cordova	47.1	32.3	39.7	78	Jul. 12+	-8	Jan. 15	9157	88.83	5.09	Sep. 11-12	122.8	16.1	Mar. 9-10	86	89	83	76	5.1	E	*46	ESE	Dec. 7	--	8.5	32	41	293	226	31	2	17	#6	35	176	7
Fairbanks	37.9	16.9	27.4	89	Jul. 14+	-51	Jan. 13	13736	10.64	1.15	Sep. 27	59.2	7.1	Jan. 8-9	66	75	70	59	6.0	N	*26	SW	Oct. 4	--	6.8	81	73	212	94	16	0	16	#51	158	230	119
Juneau	47.8	36.0	41.9	75	Jul. 12	9	Jan. 11	8341	57.77	2.45	Sep. 7-8	68.2	7.7	Dec. 20-21	85	89	84	75	9.2	ESE	*40	ESE	Dec. 23+	25	8.7	31	29	306	235	21	1	25	#8	31	120	0
King Salmon	42.7	27.5	35.1	83	Jul. 12	-27	Feb. 15	10838	19.50	1.69	Aug.31-Sep.1	41.4	6.4	Dec. 22-23	78	84	81	70	12.0	N	*53	NNW	Mar. 5	--	8.0	36	66	264	162	16	5	33	#10	84	200	32
Kotzebue	28.9	15.7	22.3	78	Aug. 12	-40	Jan. 16	15528	11.92	.94	Sep. 26-27	50.9	5.0	Sep. 26	76	82	81	73	12.3	E	*46	ESE	Feb. 17	--	6.5	93	86	187	120	11	0	27	#6	205	268	105
McGrath	35.8	17.0	26.4	88	Jul. 13	-55	Jan. 15	14076	21.37	1.37	Jul. 4-5	77.5	10.5	Jan. 3-4	66	75	70	60	5.4	N	*35	S	Sep. 27+	--	7.3	65	71	230	128	22	3	13	#27	170	232	106
Nome	34.0	19.8	26.9	80	Jul. 16	-35	Jan. 16	13839	13.56	1.26	Sep. 25-26	51.6	4.6	Jan. 4-5	75	78	76	70	11.3	E	*52	SSW	Oct. 3	40	6.8	75	91	200	122	17	1	18	#4	176	250	78
St. Paul Island	38.4	29.2	33.8	62	Jul. 15	-2	Apr. 7	11334	20.21	1.17	Oct. 2	46.8	4.3	Nov. 24-25	87	88	88	83	----	---	--	---	---	--	8.5	19	68	279	191	15	0	52	#0	88	217	5
Shemya	42.0	34.9	38.5	58	Aug. 23	19	Feb. 17+	9624	24.44	1.35	Sep. 3	66.2	3.9	Jan. 26	85	87	87	83	20.1	WSW	*66	W	Nov. 29	--	8.8	5	72	289	216	22	0	77	#0	26	168	0
Yakutat	47.7	34.3	41.0	79	Jul. 11	4	Jan. 16	8670	156.26	6.38	Sep. 10-11	202.7	32.4	Mar. 11-12	85	89	83	76	7.6	ENE	*41	ESE	Jan. 31	--	8.4	32	53	281	237	43	1	25	#6	22	146	0
ARIZONA																																				
Flagstaff	61.0	30.2	45.6	92	Jul. 16	-12	Jan. 2	7167	16.60	1.70	Aug. 21-22	60.6	11.0	Jan. 12-13	--	74	40	--	----	---	--	---	---	--	4.6	162	103	101	64	15	48	1	3	20	208	14
Phoenix	84.1	58.0	71.1	114	Jun. 19	27	Dec. 6	1578	3.39	.57	Mar. 1	.0	.0	----	43	54	35	25	6.4	E	*70	NE	Jul. 17	94	3.3	222	81	63	22	0	25	0	156	0	17	0
Prescott	70.8	41.1	56.0	99	Aug. 12+	0	Jan. 2	4466	8.33	1.00	Aug. 31-Sep. 1	12.5	7.1	Jan. 12-13	53	64	34	33	9.0	SSW	52	SW	Apr. 23	81	3.7	198	94	74	49	4	45	3	72	5	124	1
Tucson	81.3	52.6	67.0	108	Jun. 21+	20	Dec. 7	1964	8.74	1.08	Jan. 11	1.3	1.3	Jan. 1-2	43	53	30	23	8.8	SE	54	SE	Sep. 30	87	3.3	212	99	55	43	1	42	1	142	0	37	0
Winslow	70.7	40.2	55.5	103	Jun. 19	-1	Jan. 21	4928	6.90	.78	Oct. 14-15	18.1	7.8	Dec. 7-8	49	59	36	29	10.0	SW	*51	SW	Mar. 13	--	4.4	174	91	101	53	4	25	15	101	31	128	3
Yuma	90.1	60.6	75.4	117	Jul. 20+	30	Jan. 3+	906	1.42	.44	Jan. 11	.0	.0	----	37	48	29	19	8.2	N	34	S	Sep. 10	91	2.7	247	73	46	13	0	11	0	192	0	5	0
ARKANSAS																																				
Fort Smith	71.4	48.9	60.2	100	Jul. 27+	13	Dec. 23	3795	40.51	7.13	Jul. 22-23	19.5	5.6	Feb. 24-25	80	87	60	59	7.9	ENE	57	NW	May 5	57	5.7	117	101	148	91	5	50	15	89	10	94	0
Little Rock	70.6	50.1	60.4	101	Aug. 5	14	Dec. 23	3707	45.44	4.61	Jun. 26-27	32.6	11.3	Jan. 5	81	86	60	63	7.7	SW	56	NW	Jul. 27	59	5.7	119	103	144	97	8	44	26	74	4	80	0
Texarkana	72.8	53.0	62.9	100	Jul. 27	19	Jan. 24	3024	45.70	2.88	Aug. 9-10	4.3	4.0	Feb. 24-25	--	89	--	--	7.4	SSW	--	---	---	--	---	0	0	0	105	1	61	19	86	2	57	0
CALIFORNIA																																				
Bakersfield	77.9	52.9	65.4	110	Jul. 19	25	Jan. 4+	2191	7.03	1.54	Nov. 5-6	.0	.0	----	56	67	51	38	5.9	NW	*44	WNW	Feb. 8	--	3.9	191	80	95	32	0	4	23	117	0	15	0
Bishop	76.0	38.4	57.2	107	Jul. 19+	1	Jan. 2	4104	4.12	1.14	Nov. 3-4	1.0	1.0	Jan. 14-15	--	--	27	18	----	---	--	---	---	--	3.8	193	104	69	28	0	18	0	118	0	135	0
Blue Canyon	59.4	43.0	51.2	91	Jul. 19	9	Jan. 13	5501	66.[illegible]0	8.30	Feb. 7-8	195.2	17.1	Nov. 25-26	--	--	45	--	8.6	SSW	61	SSW	Feb. 8	--	5.0	151	69	146	91	40	11	49	2	16	106	0
Burbank	76.6	52.7	64.7	103	Jul. 20+	29	Jan. 2	1450	9.80	1.75	Nov. 5-6	T	T	Jan. 15	65	71	49	40	5.9	ESE	*46	ENE	Dec. 6	--	3.5	206	99	61	29	0	3	19	50	0	2	0

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:00a E. S. T.	7:00a E. S. T.	1:00p E. S. T.	7:00p E. S. T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation 01 inch or more	Snow, Sleet 1 0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
CALIFORNIA (Cont'd.)																																				
Eureka (U)	57.3	46.7	52.0	77	Oct. 16	30	Jan. 1	4683	44.78	2.32	Feb. 6-7	0.0	0.0	----	--	--	--	--	6.8	+N	48	SW	Feb. 8	47	7.3	60	83	223	131	0	2	46	0	0	6	0
Fresno	76.6	49.1	62.9	110	Jul. 20	23	Jan. 2	2615	9.57	1.01	Feb. 1-2	T	T	Jan. 1	63	78	54	37	6.8	WNW	28	NW	Apr. 21+	83	3.8	203	71	92	38	0	2	39	113	0	21	0
Long Beach	75.1	52.7	63.9	100	Sep. 12+	31	Dec. 7	1494	8.23	1.45	Feb. 1	.0	.0	----	77	80	59	53	6.4	WNW	*33	WSW	Feb. 9	--	4.0	182	118	66	32	0	4	57	30	0	1	0
Los Angeles	69.4	54.3	61.9	92	Sep. 13+	36	Jan. 5+	1610	10.67	1.88	Apr. 26-27	.0	.0	----	78	81	64	67	7.5	WSW	‡36	W	Feb. 9	--	4.2	166	128	72	24	0	3	44	3	0	0	0
Los Angeles (U)	75.1	56.2	65.7	100	Jul. 20	38	Jan. 3+	1094	9.57	1.37	Apr. 26-27	.0	.0	----	76	78	b49	54	6.1	+W	36	N	Oct. 15	80	3.4	210	110	46	27	0	5	24	31	0	0	0
Mount Shasta (U)	63.2	38.0	50.6	99	Aug. 7	9	Jan. 13	5654	41.93	4.95	Nov. 30-Dec. 1	127.0	14.2	May 23-24	--	--	59	49	---	---	--	---	---	--	4.4	186	62	118	95	29	12	1	32	5	126	0
Oakland	65.9	49.1	57.5	107	Jun. 2	29	Jan. 2	2813	14.01	1.79	Nov. 25-26	.0	.0	----	79	84	68	59	9.3	WNW	*41	S	Dec. 1	--	5.0	141	116	109	55	0	4	22	5	0	3	0
Point Arguello (R)	62.5	46.6	54.6	89	Oct. 5	24	Jan. 2	3739	14.66	1.61	Oct. 5-6	.0	.0	----	--	--	--	--	8.2	---	*37	SSE	Jan. 9	--	5.8	117	88	161	72	0	1	146	0	0	8	0
Red Bluff	75.3	51.6	63.5	114	Jul. 17	22	Jan. 2	2677	25.63	3.69	Nov. 30-Dec. 1	.4 AP	.4 AP	Jan. 14	54 AP	63 AP	48 AP	35 AP	10.6 AP	S AP	47 AP	SE AP	Feb. 8 AP	80 AP	4.5 AP	179 AP	61 AP	126 AP	70	0 AP	10 AP	13 AP	106	0	19	0
Sacramento (U)	74.1	49.7	61.9	107	Jul. 19+	27	Jan. 2	2404	14.53	1.28	Nov. 25-26	.0	.0	----	70	80	61	44	7.7	SW	40	W	Feb. 8+	80	4.2	190	68	108	60	0	5	29	78	0	12	0
Sandberg (R)	65.7	47.5	56.6	100	Jul. 18	17	Jan. 4	4212	8.12	2.23	Nov. 5-6	12.3	4.9	Jan. 14	--	--	41	--	14.0	N	*77	NW	Feb. 10	--	2.9	235	76	55	34	2	1	55	38	5	52	0
San Diego	71.4	55.8	63.6	92	Apr. 2	35	Dec. 9	1241	7.05	1.23	Jan. 11-12	.0	.0	----	78	81	61	59	6.2	WNW	33	SW	Nov. 26	70	3.8	202	98	66	39	0	2	37	3	0	0	0
San Francisco	65.4	48.6	57.0	102	Jun. 2	29	Jan. 2	2944	16.90	1.63	Nov. 12-13	.0	.0	----	83	86	71	64	11.1	WNW	52	WSW	Feb. 8	--	4.7	165	95	106	60	0	2	16	2	0	1	0
San Francisco (U)	62.0	50.8	56.4	95	Jun. 2	39	Jan. 3+	3126	17.82	1.68	Dec. 1	.0	.0	----	--	e82	b69	--	8.7	+W	36	W	Apr. 21	67	---	---	--	---	65	0	3	--	1	0	0	0
Santa Maria	67.2	45.6	56.4	89	Oct. 5+	21	Jan. 2	3112	15.86	2.07	Oct. 5-6	.0	.0	----	86	88	63	62	7.1	WNW	*37	W	May 21	--	4.0	191	99	76	37	0	1	79	0	0	16	0
COLORADO																																				
Alamosa	58.0	22.4	40.2	90	Jul. 27	-32	Jan. 20	9011	5.85	.78	Jul. 31-Aug. 1	41.2	7.6	Jan. 13-14	--	78	46	42	---	---	--	---	---	--	4.8	136	143	87	64	16	21	30	1	56	223	68
Colorado Springs	61.7	34.2	48.0	97	Jul. 27	-11	Feb. 28	6638	11.27	1.60	Oct. 17-18	36.1	4.8	Mar. 14-15	61	64	38	42	10.2	N	*39	NNW	Jan. 14	--	5.1	134	115	117	83	12	45	19	33	43	170	13
Denver	63.3	36.0	49.7	98	Aug. 31+	-11	Feb. 28	6306	14.98	1.59	Oct. 17-18	74.8	8.4	Apr. 28-29	57	62	37	38	9.4	SSW	56	NW	Apr. 16	73	5.0	147	111	108	77	25	28	3	50	34	147	18
Grand Junction	65.4	40.9	53.2	102	Jul. 27	4	Jan. 4	5553	6.24	.53	Feb. 26-27	25.3	6.4	Feb. 26-27	46	51	37	30	9.2	ESE	56	S	Apr. 23	80	4.8	149	104	113	65	8	27	4	66	22	133	0
Pueblo	65.9	36.4	51.2	103	Jul. 27+	-17	Jan. 19	5922	12.54	1.13	Jun. 8	44.3	6.9	Jan. 13-14	63	73	43	41	7.8	W	66	W	Apr. 16	78	5.0	139	116	111	68	12	27	7	62	34	150	19
CONNECTICUT																																				
Bridgeport	59.5	43.3	51.4	91	Aug. 3	7	Dec. 28+	5597	38.84	4.67	Sep. 11-12	26.8	7.6	Dec. 11-12	--	76	58	67	---	---	--	---	---	--	6.1	101	106	159	98	6	22	39	2	19	113	0
Hartford	59.3	38.0	48.7	93	Jul. 12	-5	Dec. 28	6438	50.49	3.72	Jun. 3-4	52.5	13.5	Dec. 11-12	80	81	55	66	7.8	S	50	NW	Feb. 27	59	6.2	96	104	166	109	13	23	40	5	38	142	4
New Haven	58.8	41.8	50.3	88	Aug. 3+	5	Dec. 28	5821	41.65	5.26	Sep. 11-12	37.5	13.5	Mar. 3-4	--	79	62	--	8.2	---	38	S	Jan. 3	65	6.1	99	100	167	119	10	25	20	0	21	126	0
DELAWARE																																				
Wilmington	62.5	43.7	53.1	91	Aug. 30	7	Dec. 23	5189	46.03	5.62	Sep. 11-12	31.9	11.1	Dec. 11-12	80	81	57	68	9.0	WNW	42	WNW	Feb. 19	--	6.1	96	106	164	115	9	31	32	4	19	117	0
DIST. OF COLUMBIA																																				
Washington Nat'l.AP	64.8	47.8	56.3	95	Apr. 23	10	Dec. 23	4554	36.99	2.83	Sep. 11-12	33.0	7.9	Mar. 2-3	73	75	52	58	10.3	S	54	NE	Feb. 18	60	6.0	107	101	158	109	8	27	14	23	18	91	0
FLORIDA																																				
Apalachicola (U)	74.5	60.3	67.4	92	Jul. 22	27	Jan. 23	1585	51.63	6.32	Sep. 7-8	.0	.0	----	--	--	--	--	7.7	---	48	E	Jan. 1	72	5.0	139	117	110	102	0	67	24	15	0	11	0
Daytona Beach	78.3	59.9	69.1	93	Jul. 4	26	Dec. 18	1083	59.18	4.49	Sep. 10-11	.0	.0	----	88	90	63	77	8.7	NW	*58	ESE	Sep. 11	--	5.8	101	122	143	115	0	93	24	22	0	11	0
Fort Myers	83.3	63.3	73.3	95	Jun. 25	32	Jan. 24	510	54.33	4.63	Sep. 10	.0	.0	----	88	89	58	74	7.8	---	*92	NE	Sep. 10	--	5.4	96	165	105	118	0	107	18	103	0	1	0
Jacksonville	78.7	58.3	68.5	98	Jul. 3	24	Dec. 14	1481	59.45	4.62	Sep. 10-11	.0	.0	----	85	88	55	70	8.5	NE	46	NE	Sep. 11	60	5.6	106	132	128	111	0	63	34	70	0	24	0
Key West	82.0	72.0	77.0	92	Sep. 13	50	Jan. 24	126	46.76	8.89	May 29-30	.0	.0	----	--	80	68	75	11.1	---	65	NW	Sep. 10	69	5.6	85	173	108	113	0	70	2	53	0	0	0
Lakeland (U)	80.4	62.3	71.4	97	Jul. 16	30	Dec. 22	791	65.42	6.96	Mar. 16	.0	.0	----	--	--	--	--	6.9	---	--	---	---	65	5.6	98	149	119	125	0	114	23	71	0	3	0
Miami	82.5	67.9	75.2	93	Jul. 15	34	Jan. 22	262	70.26	7.58	Sep. 9-10	.0	.0	----	82	84	61	72	8.4	ESE	63	E	Sep. 10	--	5.8	65	192	109	130	0	95	3	58	0	0	0
Miami Beach	81.2	71.1	76.2	91	Sep. 12+	38	Jan. 22	165	55.67	8.35	Sep. 23	.0	.0	----	--	--	--	--	---	---	55	E	Sep. 10	65	5.4	88	183	95	120	0	--	--	8	0	0	0

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature: Averages: Daily maximum	Temperature: Averages: Daily minimum	Temperature: Averages: Monthly	Temperature: Extremes: Highest	Date	Lowest	Date	Degree days	Precipitation: Total	Precipitation: Greatest in 24 hrs	Date	Snow, Sleet: Total	Snow, Sleet: Greatest in 24 hrs	Date	Relative humidity: 1:00a E. S. T.	7:00a E. S. T.	1:00p E. S. T.	7:00p E. S. T.	Wind: Average hourly speed	Wind: Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	Max temp: 90° and above	Max temp: 32° and below	Min temp: 32° and below	Min temp: Zero and below
FLORIDA (Cont'd.)																																				
Orlando	81.9	61.4	71.7	98	Aug. 9+	30	Jan. 23	796	68.74	8.19	Jul. 25	.0	.0	----	86	89	54	70	8.6	NNE	*46	ESE	Sep. 11	--	5.6	99	151	116	123	0	86	32	101	0	5	0
Pensacola (U)	74.4	59.4	66.9	97	Jul. 26	25	Dec. 22+	1772	67.73	4.83	Sep. 8-9	.0	.0	----	--	--	--	--	10.5	---	41	NW	Apr. 3	62	---	--	---	---	119	0	57	--	33	0	19	0
Tallahassee	76.6	56.1	66.4	95	Jul. 21	24	Dec. 23+	1811	67.12	4.48	Jun. 17-18	.0	.0	----	86	88	56	70	5.8	NNW	*29	NW	May 7	--	5.9	92	128	146	118	0	83	39	58	0	27	0
Tampa	81.3	62.7	72.0	97	Aug. 28	30	Jan. 24	742	65.44	12.11	Jul. 28-29	.0	.0	----	83	87	56	70	9.7	NNE	*56	NNW	Sep. 10	68	5.6	95	161	110	103	0	94	26	81	0	5	0
West Palm Beach	82.8	66.2	74.5	97	Aug. 23+	36	Jan. 22	356	66.77	8.71	Sep. 18-19	.0	.0	----	83	85	59	72	9.9	ESE	*46	ESE	Sep. 10	--	6.2	69	158	139	133	0	93	5	80	0	0	0
GEORGIA																																				
Athens	71.1	49.0	60.1	99	Jul. 1	11	Dec. 22+	3525	50.56	2.63	Jul. 10	8.6	5.0	Mar. 11	81	86	56	65	7.6	NE	*32	WNW	Feb. 18	--	5.6	121	112	133	102	2	49	22	65	1	78	0
Atlanta	70.5	51.3	60.9	96	Jul. 3	10	Mar. 5	3322	46.11	2.41	Aug. 9	4.8	4.0	Mar. 11	76	83	55	60	10.2	NW	*36	WNW	Mar. 22	60	5.8	106	117	143	105	1	41	14	42	4	58	0
Augusta	74.3	50.5	62.4	100	Jul. 1	13	Dec. 3	2998	45.71	3.61	Jan. 29-30	.7	.7	Mar. 11	84	87	53	66	5.8	SE	*35	WNW	Jul. 2	--	5.9	100	110	156	105	0	54	30	82	0	73	0
Columbus	74.9	51.5	63.2	98	Jul. 21	15	Jan. 23	2763	44.90	4.01	Mar. 29-30	T	T	Dec. 21+	--	87	53	64	7.5	---	*52	SSW	Feb. 10	--	5.8	105	119	142	106	0	61	9	93	0	56	0
Macon	75.6	52.5	64.1	99	Jul. 1	15	Jan. 23	2701	45.99	3.28	Mar. 29-30	T	T	Dec. 15+	79	86	49	57	8.0	WNW	60	SW	May 26+	62	5.7	112	109	145	114	0	51	17	99	0	55	0
Rome	71.2	46.4	58.8	99	Jul. 13	8	Dec. 22+	3888	43.78	4.03	Sep. 26-27	9.1	2.2	Mar. 2	81	84	54	63	4.7	---	--	---	---	--	5.7	110	121	135	114	3	53	32	78	3	103	0
Savannah	75.4	53.9	64.7	99	Jul. 2	18	Dec. 14	2356	53.73	4.85	Jul. 14-15	.0	.0	----	85	89	55	71	8.3	NE	44	W	Feb. 18	66	5.6	116	121	129	115	0	72	38	60	0	50	0
Thomasville	77.7	56.2	67.0	98	Jul. 3	20	Jan. 23	1855	54.35	3.56	Sep. 26	.0	.0	----	--	--	--	--	---	---	--	---	---	--	---	--	---	---	111	0	61	21	92	0	28	0
HAWAII																																				
Hilo	80.7	65.4	73.1	90	Oct. 1	55	Feb. 23	0	146.80	7.15	Jan. 15-16	.0	.0	----	83 AP	87 AP	79 AP	65 AP	8.7 AP	WSW AP	*38 AP	SE AP	Sep. 27 AP	34 AP	7.3 AP	35 AP	125 AP	206 AP	270	0	8 AP	0 AP	1	0	0	0
Honolulu (U)	80.2	71.0	75.6	86	Aug. 11+	60	Feb. 21	0	16.23	1.58	Mar. 6-7	.0	.0	----	69	74	71	56	11.6	ENE	40	W	Dec.18	74	5.7	78	195	93	135	0	6	0	0	0	0	0
Lihue	81.7	69.2	75.5	88	Sep. 29+	53	Feb. 21	2	42.01	5.40	Dec. 3-4	.0	.0	----	77	80	77	65	12.7	NE	34	NE	Mar. 24	59	6.3	57	170	139	208	0	6	0	0	0	0	0
IDAHO																																				
Boise	63.4	38.6	51.0	111	Jul. 19	-4	Jan. 18	5974	10.92	.94	Jul. 30	22.2	3.7	Jan. 7	61	69	52	42	7.9	SE	50	SE	Sep. 3	70	5.3	143	73	150	99	10	6	23	49	23	136	2
Idaho Falls 46 W(R)	56.6	26.2	41.4	101	Jul. 20	-32	Jan. 19	8855	8.16	.85	Jun. 9-10	38.6	7.5	Feb. 8	--	--	--	--	7.3	WSW	d38	WSW	May 23+	--	---	--	---	---	64	16	13	16	29	69	207	47
Idaho Falls 42 NW(R)	56.8	24.0	40.4	103	Jul. 21+	-43	Jan. 19	9249	5.19	.64	Apr. 23-24	----	---	----	--	--	--	--	5.0	SW	d28	SW	May 23+	--	---	--	---	---	54	--	--	--	32	74	223	61
Lewiston	62.2	39.7	51.0	108	Jul. 18	-2	Jan. 19	5732	12.66	1.36	Aug. 1	20.1	5.2	Mar. 3-4	--	74	59	48	---	---	--	---	---	--	6.3	103	75	188	106	7	13	24	39	31	106	1
Pocatello	59.6	33.8	46.7	101	Jul. 20	-22	Jan. 18	7198	9.20	1.08	Jun. 9-10	31.6	3.4	Feb. 24-25	59	70	53	44	11.7	SW	56	SW	May 12+	71	5.8	115	94	157	94	12	25	17	38	44	163	12
ILLINOIS																																				
Cairo (U)	66.5	49.5	58.0	101	Jun. 22	5	Dec. 22	4374	41.40	4.30	Jun. 27-28	38.6	7.3	Mar. 8-9+	--	81	59	--	8.3	†N	45	†SW	Feb. 9	65	5.7	110	115	141	110	14	52	11	48	17	93	0
Chicago (O'Hare)	57.1	40.4	48.8	99	Sep. 7	-17	Dec. 23	6667	28.20	2.00	Jan. 12	38.4	7.3	Feb. 9-10	79	82	62	66	12.0	SSW	*46	SW	Nov. 15+	--	6.4	90	102	174	117	11	30	11	15	69	137	6
Chicago (Midway)	58.5	42.2	50.4	100	Sep. 7	-14	Dec. 23	6304	27.84	2.86	Jan. 11-12	48.6	12.5	Dec. 19-20	76	80	59	63	11.6	NW	42	NW	Mar. 22	52	6.3	91	102	173	126	11	32	5	17	64	134	3
Moline	58.1	39.0	48.6	98	Sep. 6	-19	Mar. 6	6808	39.45	2.81	Oct. 30-31	48.0	8.5	Feb. 9-10	81	84	62	67	9.2	WNW	45	NE	Feb. 10	58	6.2	94	107	165	117	16	48	28	17	77	137	16
Peoria	57.[illegible]	39.5	48.7	94	Sep. 7	-12	Dec. 23	6686	37.63	2.52	May 24-25	37.1	6.5	Mar. 15-16	81	85	65	67	10.1	S	47	NW	May 24	57	6.1	101	100	165	116	15	49	22	13	73	141	8
Rockford	56.8	37.8	47.3	95	Sep. 7	-20	Dec. 23	7106	44.51	2.89	Jan. 11-12	44.6	10.9	Feb. 9-10	82	85	61	66	9.8	S	*40	SW	Nov. 28	--	[illegible].1	98	113	155	124	12	39	26	13	79	145	10
Springfield	60.8	41.7	51.3	99	Sep. 6	-12	Mar. 5	6082	38.91	2.66	Mar. 29-30	47.7	6.4	Feb. 25	80	83	63	67	11.7	SSW	58	W	May 25	59	6.0	111	92	163	114	19	48	23	22	59	131	11
INDIANA																																				
Evansville	64.7	44.3	54.5	98	Sep. 8+	-9	Mar. 6	5157	34.48	3.05	Jun. 23-24	36.4	10.6	Mar. 8-9	80	83	58	63	9.3	NW	42	NW	May 24+	65	6.2	96	105	165	103	10	45	15	34	29	125	4
Ft. Wayne	58.2	39.4	48.8	95	Sep. 8	-13	Dec. 23	6574	28.55	1.42	Jun. 22	33.6	7.0	Feb. 25	81	85	62	67	11.3	SW	57	S	May 20	64	6.6	69	111	186	117	9	36	23	8	64	135	6
Indianapolis	60.0	40.8	50.4	95	Sep. 8	-10	Dec. 23	6116	33.27	3.61	Jun. 22-23	24.7	4.6	Feb. 25	79	84	62	66	8.2	S	42	NW	Apr. 8	64	6.5	81	114	171	103	9	37	18	6	51	133	6
South Bend	57.3	39.4	48.4	96	Sep. 8	-16	Dec. 23	6700	34.94	2.81	Jan. 12	99.8	14.8	Mar. 4-5	82	86	64	68	10.5	SSW	*44	NW	Aug. 3	--	6.8	73	97	196	143	29	33	27	12	71	135	6

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:00a E. S. T.	7:00a E. S. T.	1:00p E. S. T.	7:00p E. S. T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
IOWA																																				
Burlington	59.6	39.8	49.7	97	Sep. 6+	-13	Mar. 5	6487	35.98	3.01	Jun. 11-12	54.3	7.7	Mar. 15-16	79	83	60	65	11.1	SSW	56	NW	Jun. 1	70	5.8	110	106	150	113	16	57	22	23	60	139	15
Des Moines	58.1	38.7	48.4	98	Aug. 3	-15	Mar. 5	6931	35.20	2.97	Jan. 11-12	50.5	7.4	Feb. 9-10	80	85	64	64	11.4	S	60	SSE	Aug. 24	63	5.7	118	100	148	111	16	47	24	20	78	143	19
Dubuque	54.6	36.3	45.5	92	Sep. 7	-18	Dec. 23	7625	43.36	4.38	May 5-6	61.2	10.6	Jan. 14-15	--	83	62	67	----	---	--	---	---	--	6.2	99	101	166	120	17	47	35	8	90	157	17
Sioux City	57.9	36.0	47.0	101	Aug. 2	-22	Mar. 5	7409	25.36	3.26	Aug. 27-28	46.2	8.0	Jan. 14	77	82	61	61	11.4	NW	49	NW	Nov. 28	67	5.6	129	91	146	101	11	41	19	29	76	156	34
Waterloo	56.3	35.2	45.8	94	Sep. 7+	-20	Dec. 23	7636	36.65	3.15	May 5-6	36.8	6.0	Jan. 14-15	83	85	63	67	9.2	---	--	---	---	--	---	---	---	---	113	12	47	27	13	89	153	25
KANSAS																																				
Concordia (U)	61.9	42.5	52.2	104	Aug. 5+	-6	Mar. 3	5881	28.74	2.20	Aug. 28	58.0	10.4	Feb. 22-23	75	81	60	58	7.5	+S	45	+SE	Jul. 16	69	4.6	170	85	111	101	15	48	19	41	[illegible]	129	3
Dodge City	65.2	42.0	53.6	106	Jul. 27	-12	Mar. 3	5463	20.14	2.27	Sep. 22-23	32.5	6.7	Feb. 14	74	80	55	54	15.8	SSE	56	N	Dec. 11+	70	5.0	146	104	116	90	10	55	29	62	40	130	8
Goodland	63.6	36.1	49.9	106	Aug. 5	-20	Mar. 3	6427	13.92	1.64	Oct. 18	57.6	8.2	Feb. 3	79	50	49	72	12.9	SSE	*53	NNW	Apr. 1	--	4.9	155	101	110	79	19	40	22	62	11	151	16
Topeka	63.4	41.7	52.6	101	Aug. 5	-5	Mar. 6	5702	25.64	2.40	Aug. 17-18	48.6	8.4	Mar. 14	79	84	58	60	11.5	S	47	S	Nov. 27	60	5.7	119	93	154	95	11	65	23	37	47	136	7
Wichita	65.3	44.9	55.1	102	Aug. 5+	-2	Mar. 3	5079	36.79	3.10	Aug. 24	33.6	5.9	Jan. 16-17	78	84	59	59	13.3	S	56	N	Jun. 20	61	5.5	129	95	142	96	11	63	17	51	39	120	1
KENTUCKY																																				
Lexington	63.0	44.2	53.6	95	Sep. 5+	-3	Dec. 22	5259	45.09	5.88	Jun. 22-23	39.4	7.5	Mar. 2-3	81	86	61	68	8.8	S	--	---	---	--	6.2	92	110	164	105	10	39	28	20	32	115	5
Louisville	64.5	44.5	54.5	94	Sep. 5+	-9	Dec. 22	5007	38.67	5.14	Jun. 22-23	42.9	9.2	Mar. 9	78	83	60	63	7.3	S	47	S	Feb. 10	51	6.1	99	101	166	110	12	41	19	20	[illegible]	119	1
LOUISIANA																																				
Baton Rouge	76.9	56.4	66.7	101	Jul. 12	22	Dec. 22+	2026	38.30	2.28	Aug. 13-14	1.0	1.0	Feb. 12	85	90	61	66	8.7	SE	--	---	---	--	6.0	98	117	151	99	1	74	42	95	0	32	0
Lake Charles	75.9	57.7	66.8	100	Jul. 12	26	Dec. 2	1909	47.96	4.67	Apr. 29-30	5.0	5.0	Feb. 12-13	86	89	62	68	6.6	N	*35	SE	Apr. 29+	--	6.3	86	110	170	94	2	66	51	85	0	18	0
New Orleans (U)	76.8	62.0	69.4	99	Jul. 12	29	Jan. 23	1488	53.88	4.05	May 6-7	.6	.6	Feb. 13	81	84	61	66	6.0	---	32	+NE	Jun. 6	57	5.4	114	144	108	106	0	62	10	88	0	4	0
New Orleans	77.0	56.9	67.0	97	Jul. 30+	23	Feb. 14	1780	47.01	3.50	Jul. 17-18	T	T	Dec. 14+	87	89	65	72	8.0	NE	*35	ENE	Apr. 3	--	5.6	111	119	136	94	0	66	39	83	0	22	0
Shreveport	74.2	54.1	64.2	100	Jul. 13	22	Feb. 26+	2697	48.51	3.67	Aug. 25-26	2.0	1.5	Feb. 17	77	85	58	59	9.8	S	--	---	---	68	5.6	128	93	145	102	1	50	26	98	0	12	0
MAINE																																				
Caribou	50.2	30.5	40.4	92	Aug. 19	-18	Jan. 10	9094	37.80	1.83	Dec. 16-17	119.3	13.9	Feb. 26-27	84	83	63	73	11.0	WSW	*58	W	Aug. 29	--	7.2	55	110	201	157	32	25	35	3	89	196	26
Portland	55.6	34.6	45.1	93	Sep. 8	-8	Jan. 9	7435	43.21	3.00	Sep. 11-12	94.0	15.7	Feb. 19-20	85	83	60	75	9.7	WSW	62	SE	Sep. 12	60	6.0	110	102	154	121	19	20	55	1	40	162	12
MARYLAND																																				
Baltimore (U)	65.0	49.2	57.1	98	Aug. 30	10	Dec. 23	4419	43.91	4.04	Sep. 11-12	----	----	----	--	--	--	--	----	---	--	---	---	--	---	---	---	---	98	--	--	--	27	16	85	0
Baltimore	64.4	43.9	54.2	95	Aug. 30	0	Dec. 23	5029	46.83	4.33	Sep. 11-12	48.4	14.1	Dec. 11-12	78	79	55	64	9.5	WNW	49	NW	Feb. 19	60	5.7	120	102	144	109	10	27	18	20	17	110	1
Frederick	62.5	40.8	51.7	93	Aug. 30+	-9	Dec. 23	5652	32.89	1.65	Aug. 9-10	38.7	9.3	Mar. 2-3	--	--	--	--	----	---	--	---	---	--	---	---	---	---	107	13	--	8	12	28	131	3
MASSACHUSETTS																																				
Blue Hill Obs. (R)	57.1	39.8	48.5	90	Sep. 8	2	Dec. 28	6411	46.69	3.27	Sep. 11-12	79.7	27.2	Mar. 3-4	80	79	54	70	----	---	92	SSE	Sep. 12	55	---	---	---	---	123	12	--	--	3	40	134	0
Boston	59.0	43.8	51.4	93	Sep. 8+	7	Dec. 13	5627	44.46	3.09	Sep. 11-12	51.7	17.7	Mar. 3-4	72	72	56	64	12.7	WNW	57	S	Sep. 12	63	6.0	105	112	149	114	9	12	38	8	20	109	0
Nantucket	55.4	42.5	49.0	80	Sep. 10+	12	Dec. 13	5965	38.57	2.21	Mar. 3-4	73.4	16.1	Mar. 4-5	84	81	68	80	13.5	WSW	59	N	Mar. 4	56	6.8	76	95	195	108	11	21	122	0	19	111	0
Pittsfield	55.1	34.3	44.7	86	Sep. 8+	-9	Dec. 23	7521	42.14	3.41	Sep. 11-12	72.0	8.1	Mar. 3-4	--	--	--	--	----	---	--	---	---	--	---	---	---	---	136	21	--	---	0	67	159	11
Worcester	54.8	37.8	46.3	88	Jul. 12	0	Dec. 28+	7065	52.19	4.79	Sep. 11-12	82.3	16.6	Mar. 3-4	74	73	56	66	9.0	WSW	*35	N	Mar. 4+	--	6.2	90	119	157	121	22	23	95	0	62	145	2
MICHIGAN																																				
Alpena	52.7	30.1	41.4	93	Sep. 8+	-17	Mar. 9	8689	27.79	2.34	Jul. 26	65.6	8.1	Jan. 18-19	--	84	62	70	6.9	+W	33	+NE	Feb. 25	47	6.9	76	95	195	152	20	29	22	3	92	184	34
Detroit (City AP)	57.5	40.8	49.2	94	Sep. 1	-5	Dec. 23	6385	26.67	2.05	Jun. 13-14	38.5	6.0	Feb. 25-26	75	78	58	63	10.8	SW	77	NW	Jul. 22	49	6.9	73	95	198	135	11	24	16	5	64	128	2
Detroit(M.Wayne Co.)	57.6	38.9	48.3	94	Sep. 1	-9	Dec. 23	6600	25.91	2.62	Jun. 13-14	32.2	6.3	Feb. 25-26	80	83	59	67	10.9	SW	--	---	---	--	6.9	71	98	197	140	10	35	27	5	65	140	3
Detroit(Willow Run)	58.2	39.7	49.0	94	Sep. 8+	-11	Dec. 23	6449	25.87	2.07	Jun. 13-14	30.0	5.6	Feb. 25-26	79	82	58	64	11.9	SW	*40	WSW	Apr. 30+	--	7.0	71	92	203	125	7	33	30	7	60	138	3

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days											
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max. temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs.	Date	Total	Greatest in 24 hrs	Date	1:00a E. S. T.	7:00a E. S. T.	1:00p E. S. T.	7:00p E. S. T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
MICHIGAN (Cont'd.)																																				
Escanaba (U)	50.0	34.7	42.4	87	Jul. 8	-7	Dec. 23	8415	37.48	2.55	Aug. 28	39.9	5.0	Nov. 29-30	78	82	67	71	10.3	--	56	†N	Feb. 10	50	6.4	86	113	167	139	15	40	17	0	96	154	10
Flint	55.5	35.7	45.6	95	Sep. 8	-10	Dec. 24+	7382	22.43	1.52	Aug. 14	52.6	5.9	Feb. 25-26	84	85	61	69	9.3	SW	*46	NNW	Sep. 1	--	7.0	67	98	201	132	17	33	34	3	78	151	15
Grand Rapids	56.7	38.0	47.4	96	Sep. 7	-5	Dec. 23	6887	28.11	1.89	Jan. 12-13	84.2	8.1	Feb. 9-10+	80	83	61	66	9.6	WNW	43	SW	Apr. 11	52	7.0	67	106	193	142	27	34	18	7	73	145	7
Lansing	56.4	36.1	46.3	94	Sep. 8+	-7	Dec. 23	7213	25.20	1.56	Jan. 12-13	40.0	5.1	Feb. 25-26	82	84	63	67	12.5	W	56	W	Nov. 30+	53	6.9	72	99	195	139	12	29	34	4	73	149	10
Marquette (U)	49.5	34.8	42.2	92	Sep. 6	-5	Jan. 5	8533	41.36	2.51	Aug. 28	176.[illegible]	11.3	Feb. 10-11	--	78	65	70	8.3	†W	52	†SW	Aug. 27	55	7.1	61	105	200	170	55	23	32	3	102	162	6
Muskegon	55.7	38.3	47.0	90	Sep. 8+	-5	Dec. 24	6933	31.87	1.56	Nov. 15+	112.6	8.3	Feb. 28-29	81	84	65	69	9.8	W	*44	S	Nov. 15+	--	6.7	84	86	196	156	37	46	31	4	70	142	4
Sault Ste. Marie	48.7	31.5	40.1	89	Sep. 7	-12	Dec. 23+	9117	33.11	2.09	Aug. 28-29	78.8	4.7	Jan. 6-7	86	87	67	74	9.2	WNW	*38	WNW	Jan. 8	49	7.1	64	98	204	179	25	29	48	0	102	169	23
MINNESOTA																																				
Duluth	48.2	29.1	38.7	93	Jul. 21	-25	Jan. 4	9741	26.93	2.28	Aug. 8-9	58.4	11.4	Nov. 28	79	83	63	64	12.7	WNW	68	E	Nov. 28	58	6.7	80	97	189	117	15	34	60	1	113	188	48
International Falls	48.0	25.2	36.6	90	Aug. 12+	-29	Jan. 4	10529	20.17	1.57	Jul. 24-25	46.2	9.2	Nov. 28-29	77	80	61	62	7.9	NW	*52	SW	Apr. 13	--	6.6	75	111	180	119	17	30	31	3	117	201	73
Minneapolis	53.8	33.8	43.8	95	Sep. 6+	-19	Jan. 5	8286	21.46	1.71	Sep. 7-8	21.8	6.6	Jan. 1-2	76	80	61	63	9.9	NW	42	NW	Apr. 11	57	5.9	112	96	158	100	9	26	13	15	94	165	27
Rochester	53.7	34.1	43.9	93	Sep. 6+	-17	Mar. 5	8185	25.04	2.00	Jun. 16	18.5	3.5	Feb. 20-21	82	85	64	67	10.8	NW	--	---	---	--	6.2	106	94	166	91	8	38	25	12	90	165	26
St. Cloud	52.4	30.6	41.5	95	Jul. 21	-26	Jan. 4	9005	21.25	3.60	Aug. 27-28	20.4	8.3	Jan. 1-2	80	83	60	61	----	---	--	---	---	--	5.9	108	95	163	91	5	26	22	10	103	181	50
MISSISSIPPI																																				
Jackson	74.1	52.5	63.3	100	Jul. 22	10	Feb. 14	2855	45.13	3.68	Aug. 21-22	9.1	9.1	Feb. 12-13	81	87	57	62	5.7	NW	38	NW	Jan. 29	57	5.6	119	109	138	111	2	68	15	92	1	51	0
Meridian	74.7	50.8	62.8	101	Jul. 13	14	Feb. 14	2914	55.15	3.54	Oct. 30-31	3.1	3.1	Feb. 12-13	89	93	57	67	6.5	NE	*28	SW	Feb. 9	--	5.6	122	109	135	99	2	52	18	101	0	59	0
Vicksburg (U)	72.4	55.1	63.8	96	Jul. 26	22	Feb. 14+	2685	56.12	6.70	Aug. 21-22	10.0	10.0	Feb. 12-13	--	--	--	--	7.5	---	36	S	Aug. 28	60	5.6	108	118	140	107	2	58	21	63	1	37	0
MISSOURI																																				
Columbia	64.0	43.4	53.7	100	Sep. 1	-9	Mar. 5	5424	28.33	2.51	Jun.30-Jul.1	49.4	7.2	Mar. 2	77	84	58	59	10.7	S	54	SW	Apr. 17	62	5.7	126	90	150	106	16	49	12	46	45	118	3
Kansas City	63.8	45.9	54.9	100	Aug. 5+	0	Mar. 5	5259	32.63	2.80	Oct. 13-14	63.0	8.7	Mar. 1-2	69	76	55	54	9.0	SSW	56	SW	Aug. 16	65	5.7	116	104	146	106	13	54	11	38	46	116	1
St. Joseph	62.1	41.7	51.9	97	Aug. 5+	-11	Mar. 5	5932	30.04	3.31	Aug. 17-18	38.4	6.7	Mar. 15-16	--	--	--	--	11.1	S	*40	W	Nov. 28+	--	5.2	144	90	132	100	11	62	29	34	52	133	9
St. Louis	63.4	45.9	54.7	99	Sep. 7	-5	Mar. 5	5217	31.78	3.29	Jun. 28-29	40.6	6.6	Mar. 2	75	82	60	61	9.3	WNW	45	NW	Jun. 30+	60	6.1	98	115	153	115	14	39	14	33	34	117	2
Springfield	65.7	43.7	54.7	100	Sep. 6+	-1	Mar. 4	5023	30.30	2.09	Jul. 17-18	30.4	7.3	Feb. 27-28	79	85	59	60	12.1	SSE	65	SW	Mar. 29	60	5.9	109	99	158	110	9	44	18	50	32	118	1
MONTANA																																				
Billings	60.1	36.4	48.3	105	Jul. 19	-17	Mar. 2	6808	9.39	.84	May 2-3	38.9	4.8	m Dec.31-Jan.1	54	62	47	40	11.6	SW	52	NW	Jun. 20	66	6.0	98	116	152	93	16	19	17	41	47	147	14
Butte	52.4	23.6	38.0	96	Jul. 20+	-33	Feb. 28	9851	8.44	.85	Jun. 9-10	50.4	4.0	Apr. 22	--	--	--	--	7.3	NW	*40	NNE	Dec. 14	--	6.5	82	93	191	88	18	33	9	7	61	246	46
Glasgow	53.6	30.2	41.9	104	Jul. 19	-27	Mar. 3	8963	7.30	.54	Jun. 21-22	22.5	3.4	Apr. 24	68	75	55	51	----	---	--	---	---	--	6.2	94	114	158	85	8	23	21	29	91	173	50
Great Falls	56.8	35.1	46.0	102	Jul. 22	-23	Mar. 3	7394	9.81	1.14	Aug. 24-25	38.8	9.2	Apr. 23	54	60	45	40	10.8	SW	69	SW	Sep. 4	68	6.0	99	115	152	87	9	22	13	23	55	145	16
Havre (U)	56.5	31.5	44.0	105	Jul. 22	-24	Mar. 3	8138	10.66	.99	Aug. 22-23	42.4	7.0	Apr. 24	--	73	55	--	8.8	†SW	70	SW	Sep. 4	64	6.0	100	108	158	85	14	20	3	32	72	165	39
Helena	56.1	30.8	43.5	102	Jul. 19	-24	Jan. 20	8107	7.51	.98	Aug. 15-16	42.1	12.9	Apr. 23	59	67	51	43	8.7	W	60	SW	Jul. 20	71	6.1	92	119	155	76	9	31	7	20	54	178	26
Kalispell	53.5	28.8	41.2	104	Jul. 19	-29	Mar. 3	8854	14.24	.96	Aug. 1-2	75.0	8.5	Dec. 18	--	--	64	--	----	---	--	---	---	--	6.6	82	91	193	134	24	17	34	24	77	202	27
Miles City	59.1	33.9	46.5	109	Jul. 20	-25	Mar. 3	7636	6.99	.73	Jun. 15	22.4	3.0	Jan. 1	--	--	--	--	9.9	NW	*46	N	Jul. 11+	--	6.0	100	105	161	76	12	24	9	47	66	164	28
Missoula	56.0	29.7	42.9	105	Jul. 19	-22	Jan. 20	8321	9.87	.75	Aug. 1-2	51.8	5.7	Jan. 8	70	81	62	49	6.4	NW	37	W	Nov. 21+	53	6.7	85	84	197	112	20	14	29	33	61	198	22
NEBRASKA																																				
Grand Island	59.9	36.4	48.2	100	Jul. 11	-21	Mar. 4	6950	23.93	1.95	May 5-6	42.7	8.3	Jan. 14	77	83	59	59	11.3	S	--	---	---	--	5.2	141	89	136	90	14	52	21	37	66	154	26
Lincoln (U)	60.3	40.2	50.3	103	Jul. 11	-10	Mar. 4	6468	31.52	1.89	Aug. 23-24	49.3	5.8	Feb. 9-10	--	--	--	--	10.1	†NW	53	†N	Aug. 5+	68	5.3	135	95	136	94	15	52	13	42	63	139	11
Norfolk	57.5	35.0	46.3	101	Jul. 11	-24	Jan. 5	7598	31.01	2.40	Jun. 8-9	53.9	8.3	Jan. 1	--	81	58	59	----	---	--	---	---	--	5.5	121	111	134	86	14	54	18	32	77	162	30

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature: Averages: Daily maximum	Temperature: Averages: Daily minimum	Temperature: Averages: Monthly	Temperature: Extremes: Highest	Temperature: Extremes: Date	Temperature: Extremes: Lowest	Temperature: Extremes: Date	Degree days	Precipitation: Total	Precipitation: Greatest in 24 hrs.	Precipitation: Date	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Greatest in 24 hrs.	Precipitation: Snow, Sleet: Date	Relative humidity: 1:00a E. S. T.	Relative humidity: 7:00a E. S. T.	Relative humidity: 1:00p E. S. T.	Relative humidity: 7:00p E. S. T.	Wind: Average hourly speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear	Number of days: Sunrise to sunset: Partly cloudy	Number of days: Sunrise to sunset: Cloudy	Number of days: Precipitation .01 inch or more	Number of days: Snow, Sleet 1.0 or more	Number of days: Thunderstorms	Number of days: Heavy fog	Number of days: Max temp: 90° and above	Number of days: Max temp: 32° and below	Number of days: Min temp: 32° and below	Number of days: Min temp: Zero and below
NEBRASKA (Cont'd.) North Platte	61.2	33.9	47.6	103	Aug. 2	-22	Mar. 3	7123	1[illegible].32	1.24	Jun. 12-13	39.8	7.3	Jan. 14	73	81	52	50	11.2	SSE	72	N	Jun. 19	64	5.5	127	100	139	88	10	46	18	41	54	171	22
Omaha	59.4	39.5	49.5	98	Aug. 3	-14	Mar. 5	6648	33.19	2.44	Jun. 19-20	51.2	7.3	Jan. 14-15	77	83	60	60	11.6	SSE	55	N	Aug. 5	63	5.3	134	95	137	100	16	49	22	29	65	144	19
Scottsbluff	61.9	33.6	47.8	101	Aug. 21+	-16	Mar. 3	6925	9.40	.85	Aug. 24-25	32.1	4.3	Nov. 27-28	78	48	46	68	11.6	NW	*52	NW	Nov. 28+	--	5.5	125	106	135	79	14	30	13	47	44	171	18
Valentine	59.6	32.3	46.0	103	Aug. 31+	-27	Mar. 4	7656	19.37	3.19	Aug. 24-25	26.9	5.1	Apr. 27	83	56	53	76	10.8	+S	51	+N	Nov. 28	69	5.3	133	107	126	73	13	41	6	42	60	179	37
NEVADA Elko	62.2	30.0	46.1	102	Jul. 19	-19	Jan. 18	7195	7.84	.74	Feb. 7-8	31.1	2.7	Dec. 2+	51	63	46	35	5.6	SW	*36	S	Jun. 7	--	5.3	134	98	134	85	11	16	8	40	25	207	11
Ely	61.5	28.5	45.0	97	Jul. 16	-17	Jan. 4	7454	7.89	1.29	Nov. 5-6	41.6	5.0	Jan. 12	51	60	39	34	10.7	S	57	S	Apr. 22	82	5.2	122	114	130	69	13	43	2	28	30	218	14
Las Vegas	79.7	53.3	66.5	113	Jul. 17+	20	Jan. 2	2588	4.40	1.78	Nov. 5-6	.4	.4	Jan. 15	34	41	27	20	9.9	SW	*41	SW	Mar. 30	87	3.4	209	94	63	21	0	10	3	144	0	38	0
Reno	67.5	31.0	49.3	102	Jul. 19+	-9	Jan. 16	6030	5.78	.68	Nov. 3-4	21.4	5.6	Jan. 14-15	58	75	47	33	5.9	S	54	S	Mar. 30+	84	4.8	159	82	125	38	8	8	9	55	9	199	2
Winnemucca	66.0	31.3	48.7	105	Jul. 18	-14	Jan. 13	6443	8.11	.86	Nov. 6-7	13.6	3.0	Jan. 11-12	53	63	42	33	7.1	W	57	W	May 12	59	5.4	134	89	143	63	4	17	2	56	14	191	7
NEW HAMPSHIRE Concord	57.9	34.2	46.1	94	Sep. 8	-12	Jan. 11	7209	40.93	4.12	Sep. 12	64.3	11.5	Dec. 12	83	80	53	66	6.9	NW	42	E	Sep. 12	59	5.9	101	125	140	116	16	21	51	5	36	168	15
Mt. Washington Obs.	33.6	20.6	27.1	67	Sep. 9	-34	Jan. 9	13794	81.21	4.80	Sep. 12-13	257.7	21.0	Feb. 19	87	85	85	86	34.2	W	‡130	W	Feb. 27	41	7.3	60	83	223	191	61	12	323	0	162	227	156
NEW JERSEY Atlantic City	62.7	44.3	53.5	93	Aug. 30	6	Dec. 23	5068	37.90	3.19	Sep. 11-12	26.2	9.5	Mar. 3-4	81	82	55	69	12.5	WNW	60	NW	Sep. 12	--	6.1	103	99	164	101	7	26	32	7	18	113	0
Newark	62.6	45.3	54.0	94	Aug. 29	8	Dec. 13	4987	44.47	2.55	Sep. 11-12	51.8	20.4	Dec. 11-12	71	73	52	59	9.7	SW	*51	NE	Sep. 12	--	6.0	100	113	153	115	12	26	17	15	15	106	0
Trenton (U)	61.9	45.0	53.5	92	Aug. 29	9	Dec. 24	5070	40.91	4.01	Sep. 11-12	38.7	16.6	Dec. 11-12	--	--	--	--	8.9	S	56	NW	Sep. 12	65	5.9	103	121	142	119	8	32	--	10	23	106	0
NEW MEXICO Albuquerque	6[illegible].6	44.5	57.1	101	Jul. 29	9	Jan. 19+	4324	[illegible].12	1.31	Oct. 15-16	7.9	2.1	Dec. 8-9	45	57	38	29	7.7	N	66	E	Dec. 6	77	4.1	181	107	78	49	4	35	2	77	8	110	0
Clayton	66.0	38.2	52.1	101	Jul. 2	-3	Mar. 3	5403	19.34	3.48	Sep. 8-9	22.5	4.0	Jan. 16-17	--	69	40	44	----	---	--	---	---	--	4.8	155	99	112	70	7	61	7	38	24	135	5
Raton	63.9	31.7	47.8	96	Jun. 29+	-10	Jan. 20+	6582	17.08	1.47	Aug. 9	29.5	4.3	Jan. 13-14	--	--	41	--	----	---	--	---	---	--	5.0	138	118	110	93	10	72	11	22	28	182	12
Roswell	74.9	42.7	58.8	107	Jun. 21+	-1	Feb. 25	3935	13.57	3.17	Oct. 16-17	28.9	15.3	Dec. 8-9	58	69	41	34	9.7	---	70	NW	Feb. 9	--	4.3	176	96	94	52	6	30	14	113	11	114	1
NEW YORK Albany	57.2	37.5	47.4	92	Aug. 29	-11	Dec. 24	6836	38.35	3.66	Sep. 11-12	69.0	9.7	Mar. 3-4	80	81	57	67	9.0	WNW	46	W	Feb. 20+	58	6.7	73	109	184	122	16	30	24	2	62	140	8
Binghamton	57.0	40.0	48.5	92	Sep. 8	-7	Dec. 28	6521	37.23	2.50	Sep. 12	68.0	9.4	Feb. 14	82	84	64	69	9.0	NNW	56	SE	Jun. 17+	48	7.3	46	102	218	150	22	33	58	3	56	130	6
Buffalo	55.9	38.6	47.3	92	Jul. 26	-8	Dec. 24	6853	35.16	1.42	Feb. 18-19	138.2	15.8	Nov. 29-30	81	82	62	70	10.9	WSW	43	SW	Jul. 22	50	7.0	63	97	206	170	35	18	23	4	76	141	8
New York (LaGuardia)	61.5	47.3	54.4	93	Aug. 30	8	Dec. 13	4825	51.17	3.70	Sep. 11-12	40.0	15.3	Mar. 3-4	72	54	61	70	12.7	---	70	NE	Sep. 12	--	6.1	94	12	160	124	13	30	10	7	18	89	0
New York (U)	60.0	46.2	53.1	89	Aug. 28	7	Dec. 13	5055	52.85	4.90	Jul. 30	41.4	17.0	Dec. 11-12	75	61	62	70	12.8	NW	65	NW	Feb. 20	64	5.8	105	131	130	117	11	25	7	0	20	96	0
New York (Central Park)	61.5	46.5	54.0	91	Aug. 27+	8	Dec. 13	4948	46.39	3.56	Jul. 29	41.5	15.2	Dec. 11-12	--	73	56	63	9.1	SW	47	NE	Feb. 18	59	5.8	102	126	138	119	14	16	8	5	30	99	0
Rochester	56.1	37.8	47.0	95	Sep. 7	-7	Dec. 24	6946	26.76	1.61	Jun. 14-15	146.8	18.7	Feb. 14-15	82	83	62	69	10.9	WSW	56	W	Apr. 18	57	7.0	66	103	197	149	39	22	13	3	74	142	7
Syracuse	56.7	38.5	47.6	91	Sep. 8+	-7	Dec. 24	6752	32.21	1.58	Sep. 9	139.1	18.3	Feb. 14-15	77	79	60	66	10.3	WSW	43	S	Jan. 2	47	6.9	70	96	100	173	35	22	13	3	69	136	5
NORTH CAROLINA Asheville (U)	64.9	44.4	54.7	90	Sep. 6+	4	Dec. 22	4675	37.60	1.91	Aug. 12	39.8	11.0	Mar. 9	--	84	55	64	7.6	---	42	NW	Dec. 12	53	5.9	94	135	137	128	7	49	68	3	19	104	0
Cape Hatteras (R)	68.5	54.5	61.5	91	Aug. 9	19	Dec. 13	2910	58.80	3.92	Apr. 4-5	8.5	7.0	Mar. 12	83	83	68	80	11.0	SW	--	---	---	--	5.7	117	105	144	127	2	55	16	2	1	47	0
Charlotte	71.0	48.7	59.9	[illegible]7	Aug. 8+	10	Mar. 6	3620	44.05	2.49	May 7-8	22.9	8.0	Mar. 2	78	84	52	61	8.8	NE	56	NE	Jan. 30	65	5.7	114	105	147	107	5	43	30	66	4	78	0
Greensboro	67.3	45.8	56.6	94	Aug. 8+	5	Mar. 6	4362	42.54	2.17	Aug. 22-23	31.7	11.1	Mar. 9	81	85	52	64	8.0	WSW	43	N	Oct. 3	69	5.6	116	116	134	118	6	51	26	31	9	108	0
Raleigh	69.0	46.8	57.9	96	Jun. 24	11	Dec. 23+	3994	48.00	2.60	Jul. 29	18.7	7.1	Mar. 2-3	80	84	52	80	7.5	SSW	*35	NNE	Oct. 3	62	5.3	127	114	125	103	3	47	37	39	6	101	0
Wilmington	72.1	52.0	62.1	95	Aug. 8+	16	Dec. 14	[illegible]984	58.12	6.26	Sep. 11-12	6.2	5.3	Mar. 11-12	87	88	59	76	9.4	N	53	NW	Sep. 11	64	5.4	121	112	133	109	1	43	18	48	2	62	0

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp.		Min temp.	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:00a E. S. T.	7:00a E. S. T.	1:00p E. S. T.	7:00p E. S. T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
NORTH CAROLINA (Cont'd.)																																				
Winston-Salem	67.8	47.1	57.5	95	Jun. 24	10	Dec. 23	4177	44.87	3.33	May. 26-27	33.1	10.9	Mar. 9	72	77	50	59	8.7	SW	*50	NE	Jul. 31	--	5.5	121	115	130	118	7	52	22	10	7	97	0
NORTH DAKOTA																																				
Bismarck	54.7	29.8	42.3	108	Jul. 20	-22	Jan. 5	8841	14.04	1.52	May 24-25	42.4	4.8	Dec. 5	70	75	54	52	11.9	WNW	66	N	Jun. 27+	66	6.1	93	114	159	79	14	25	4	34	92	189	48
Devils Lake (U)	49.4	27.2	38.3	99	Jul. 20	-25	Dec. 27+	10114	16.39	1.83	Jun. 9	49.5	8.7	Dec. 5	--	83	61	62	8.3	†NW	45	†NW	Feb. 8	65	6.0	101	110	155	94	14	21	13	16	113	194	78
Fargo	51.9	29.0	40.5	100	Jul. 20	-31	Dec. 27	9449	19.04	1.68	Aug. 25	32.5	10.9	Nov. 28	77	82	63	61	15.1	N	88	N	Sep. 1	57	6.1	94	116	156	74	8	27	13	18	119	191	65
Williston (U)	53.0	31.1	42.1	106	Jul. 20	-22	Jan. 5	8888	14.37	2.08	Jun. 12	24.4	3.8	Apr. 25	--	77	57	51	7.0	†SE	41	†NW	Apr. 13	60	6.3	89	108	169	78	7	20	3	25	93	179	45
OHIO																																				
Akron	57.7	39.2	48.5	90	Sep. 8	-8	Dec. 22	6546	27.08	1.54	Jun. 12-13	72.0	7.7	Mar. 3	82	85	61	70	10.7	SW	--	---	----	--	6.8	71	94	201	141	25	35	29	2	70	134	6
Cincinnati (Abbe Obs.)	63.0	44.3	53.7	95	Sep. 5	-1	Dec. 22	5285	37.88	3.48	Aug. 9-10	34.2	6.0	Dec. 31-1	75	79	56	61	6.6	SSW	34	SW	May 20	55	6.8	68	111	187	124	13	38	34	22	34	118	2
Cleveland	57.4	38.8	48.1	88	Sep. 4+	-7	Dec. 23	6588	31.91	1.89	Aug. 20-21	56.2	10.7	Mar. 3	82	83	66	73	11.0	S	42	N	Sep. 1	46	7.1	71	80	215	138	15	36	19	0	67	136	6
Columbus	61.2	41.3	51.3	93	Sep. 8	-7	Dec. 13	5829	29.50	1.64	Jul. 13-14	39.1	8.7	Dec. 20-21	79	82	60	65	8.1	S	42	W	Feb. 22	51	6.7	73	114	179	126	13	43	30	13	52	128	4
Dayton	60.2	41.5	50.9	94	Sep. 8	-8	Dec. 23	6032	28.19	2.49	Jul. 13	40.2	5.7	Mar. 2-3	77	82	58	64	10.3	SSW	56	W	Apr. 17	61	6.6	76	111	179	122	12	31	23	11	58	127	5
Mansfield	57.0	39.8	48.4	90	Sep. 4	-9	Dec. 23	6579	27.80	1.28	Jun. 13-14	48.2	7.5	Mar. 3	--	84	66	--	----	---	--	---	----	--	6.9	68	102	196	150	17	31	25	1	75	130	4
Sandusky (U)	58.5	42.4	50.5	93	Sep. 4	-7	Dec. 23	6115	31.03	1.46	Sep. 12-13	32.4	7.9	Mar. 3	--	--	--	--	8.6	---	52	NW	Jun. 4	59	5.8	97	127	142	125	7	38	26	11	64	127	2
Toledo	58.1	38.2	48.2	95	Sep. 4	-11	Dec. 23	6666	27.24	1.92	Jul. 1	34.8	6.4	Feb. 25	83	86	63	70	8.3	WSW	35	SW	May 6+	58	6.8	68	110	188	120	7	40	19	5	62	142	6
Youngstown	57.2	38.4	47.8	88	Sep. 8+	-5	Dec. 22	6649	29.50	1.42	Jun. 11-12	73.6	7.2	Mar. 3	81	83	61	69	10.5	SW	*40	N	Sep. 1	--	7.2	66	88	212	144	24	28	29	0	69	138	3
OKLAHOMA																																				
Oklahoma City	68.5	48.3	58.4	100	Jun. 21	3	Mar. 3	4098	39.50	3.52	Jul. 22-23	25.0	5.2	Jan. 5	78	84	59	59	12.8	SSE	75	NW	Apr. 28	64	5.3	132	108	126	95	9	52	22	54	18	99	0
Tulsa	69.4	47.8	58.6	100	Jul. 12	4	Mar. 3	4084	38.06	3.25	Jul. 22-23	20.2	4.2	Feb. 27	79	85	58	57	9.2	SSE	48	SW	May 19	55	5.6	116	100	150	89	9	48	11	64	16	96	0
OREGON																																				
Astoria	57.9	43.0	50.5	85	Sep. 9	22	Feb. 28+	5250	71.25	2.85	Nov. 19-20	7.0	5.9	Mar. 2-3	87	90	79	72	9.7	SE	*52	SSW	Dec. 18	--	7.8	39	78	249	200	2	12	53	0	0	38	0
Burns (U)	60.0	32.1	46.1	101	Jul. 18	-9	Jan. 13	7256	12.77	.93	Feb. 7-8	49.2	6.1	Jan. 7	61	71	55	43	----	---	--	---	----	--	5.5	128	88	150	97	18	14	15	28	21	198	7
Eugene	63.0	41.1	52.1	100	Jul. 6	20	Feb. 29+	4878	47.08	4.53	Nov. 23-24	3.9	3.9	Mar. 2-3	--	--	72	59	8.2	---	*40	SSW	Nov. 20+	--	6.6	87	78	201	143	2	8	71	17	3	58	0
Meacham	52.5	34.8	43.7	103	Jul. 18	-3	Feb. 27	7959	33.97	1.70	Nov. 15-16	162.0	9.6	Feb. 14-15	--	--	64	--	----	---	--	---	----	--	6.2	109	66	191	147	55	8	47	9	49	173	4
Medford	68.0	41.0	54.5	105	Jul. 28	17	Jan. 4	4496	20.60	1.93	Nov. 24-25	4.9	3.5	Nov. 25	69	84	66	45	5.1	WNW	*31	SE	Jan. 29	--	5.7	119	81	166	103	1	8	44	58	1	72	0
Pendleton	62.7	40.9	51.8	108	Jul. 18	-2	Jan. 13	5521	11.71	.66	May 19-20	16.0	3.4	Mar. 2-3+	65	72	57	49	9.9	SE	*77	W	Apr. 13	--	5.8	121	77	168	99	7	6	42	40	39	95	1
Portland (U)	61.8	46.1	54.0	99	Aug. 8+	23	Mar. 3+	4333	44.38	2.75	Nov. 23-24	20.3	9.6	Jan. 18-19	AP 76	AP 83	AP 73	AP 59	AP 8.3	AP E	AP 47	AP SW	AP Apr.13	AP 46	AP 7.4	AP 61	AP 64	AP 241	160	5	AP 6	AP 55	10	3	29	0
Roseburg	66.0	41.9	54.0	103	Aug. 7+	16	Feb. 28	4362	36.09	2.41	Nov. 23-24	1.4	.5	Dec. 31+	--	--	72	54	4.7	†N	30	SW	Nov. 20	53	6.5	88	84	194	142	0	8	56	27	0	51	0
Salem	62.9	40.7	51.8	104	Aug. 8	16	Feb. 27	4965	41.11	2.57	Nov. 24	15.4	8.5	Mar. 2-3	82	89	74	60	6.4	S	*32	S	Nov. 24+	--	6.8	78	75	213	162	4	8	51	17	2	67	0
Sexton Summit (R)	56.1	39.5	47.8	93	Aug. 8+	17	Jan. 2+	6507	46.70	3.78	Nov. 23-24	90.8	12.0	Feb. 8-9	--	--	69	--	12.5	S	--	---	----	--	5.5	139	60	167	134	25	2	132	6	15	125	0
PACIFIC AREA																																				
Canton Island	89.7	78.5	84.1	94	Oct. 25	73	May 19	0	19.35	3.98	Feb. 16-17	.0	.0	----	76	79	80	63	14.5	ENE	*32	NE	May 7	--	9.6	1	27	338	90	0	2	0	226	0	0	0
Guam (R)	85.7	72.9	79.3	90	Apr. 23	62	May 2+	0	81.19	3.37	Aug. 18-19	.0	.0	----	--	--	--	--	6.8	†E	30	NE	Nov. 29	45	---	---	---	---	268	0	38	0	1	0	0	0
Johnston Island	83.5	74.9	79.2	88	Oct. 7+	68	Feb. 23+	0	27.72	2.61	Mar. 1-2	.0	.0	----	75	77	77	69	14.0	---	48	E	Aug. 30	75	6.5	23	226	117	160	0	0	0	0	0	0	0
Koror (R)	87.6	75.7	81.7	92	Oct. 15+	72	Oct. 20+	0	151.21	5.29	Jan. 24-25	.0	.0	----	78	90	92	81	5.6	E	31	SW	Dec. 1	--	9.6	0	18	348	271	0	31	0	58	0	0	0
Majuro	85.3	77.2	81.3	88	Dec. 17+	71	Jun. 6	0	153.03	3.72	Apr. 7-8	.0	.0	----	--	--	83	78	10.8	---	34	E	Jun. 26	--	---	---	---	---	288	0	17	0	0	0	0	0
Ponape (R)	86.6	74.4	80.5	90	Nov. 15+	70	Aug. 31+	0	205.29	5.16	Feb. 17-18	.0	.0	----	80	90	91	78	4.6	E	24	E	Dec. 26+	51	9.3	1	32	333	304	0	42	0	10	0	0	0

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:00a E. S. T.	7:00a E. S. T.	1:00p E. S. T.	7:00p E. S. T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
PACIFIC AREA (Cont'd.)																																				
Truk	86.5	76.2	81.4	92	Oct. 23	71	Aug. 21	0	138.70	4.70	Dec. 11-12	.0	.0	----	78	86	88	78	6.1	NNE	32	S	Nov. 28+	--	9.2	1	50	315	278	0	32	0	13	0	0	0
Wake Island	85.6	75.6	80.6	90	Sep. 7+	69	Oct. 15+	0	31.35	3.11	Oct. 6-7	.0	.0	----	74	79	80	70	14.1	ENE	*29	E	Dec. 15	--	5.1	125	159	82	180	0	16	0	12	0	0	0
Yap (R)	86.8	76.0	81.4	91	Sep. 27+	69	Nov. 30	0	127.59	8.91	Nov. 30	.0	.0	----	77	88	89	80	5.7	NE	72	SW	Dec. 1+	54	9.4	1	33	332	250	0	20	0	21	0	0	0
PENNSYLVANIA																																				
Allentown	60.2	40.6	50.4	90	Aug. 29	-3	Dec. 23	5917	46.81	3.56	Sep. 11-12	49.8	13.8	Mar. 3	81	83	58	68	10.0	W	*52	ESE	Feb. 25	--	6.0	96	119	151	125	14	35	17	1	31	134	2
Erie	56.1	40.7	48.6	92	Sep. 7	-1	Dec. 23+	6469	27.41	1.34	Jan. 12-13	66.5	7.7	Feb. 13-14	70	71	58	63	12.1	S	*55	SE	Mar. 16	--	7.0	62	96	208	160	22	35	16	3	65	129	3
Harrisburg	61.5	43.1	52.3	92	Aug. 29+	-8	Dec. 23	5468	39.15	2.69	May 8-9	55.0	11.0	Dec. 11-12	73	75	51	59	6.9	W	37	W	Feb. 20	57	6.6	78	103	185	132	12	39	19	8	27	118	3
Philadelphia	62.4	43.2	52.8	92	Apr. 25	7	Dec. 15	5266	41.15	5.45	Sep. 11-12	33.6	14.6	Dec. 11-12	77	78	57	65	8.8	WNW	49	NE	Sep. 12	60	6.2	89	117	160	115	8	27	17	7	20	125	0
Pittsburgh	58.6	39.6	49.1	90	Jul. 26	-3	Dec. 23	6288	31.29	2.18	May 7-8	69.9	12.5	Mar. 3	76	79	58	63	8.6	WNW	*35	WNW	May 17+	60	7.3	57	86	223	148	17	29	12	1	69	136	5
Reading (U)	62.1	44.7	53.4	92	Aug. 28	3	Dec. 23	5179	40.39	3.87	Sep. 11-12	35.6	11.5	Mar. 3	--	--	--	--	10.2	---	56	SW	Jun. 24+	55	6.3	90	115	161	110	9	34	5	9	22	111	0
Scranton	57.1	39.1	48.1	90	Aug. 29	-4	Dec. 28+	6582	38.99	3.09	Sep. 11-12	67.6	15.5	Mar. 3-4	75	79	58	64	8.6	SW	50	SE	Feb. 25	52	6.6	73	110	183	140	13	37	26	1	59	138	3
Williamsport	59.3	39.6	49.5	93	Aug. 29	-11	Dec. 23	6208	43.25	2.22	May 8-9	62.8	13.3	Mar. 3	80	82	56	64	8.1	W	*40	W	Apr. 8	--	6.8	65	110	191	[illegible]	16	39	48	8	35	134	5
PUERTO RICO																																				
San Juan (U)	84.1	74.0	79.2	93	Jun. 3	68	Feb. 17	0	64.10	3.22	Feb. 10-11	.0	.0	----	88	84	66	80	8.8	ENE	31	SE	Sep. 14	55	6.2	44	204	118	187	0	51	0	15	0	0	0
RHODE ISLAND																																				
Block Island	56.2	44.0	50.1	82	Aug. 28	10	Dec. 13	5640	52.18	8.52	Sep. 19-20	30.5	11.5	Mar. 3-4	--	--	--	--	----	---	--	---	----	--	6.1	99	108	159	109	8	13	33	0	17	102	0
Providence	58.9	41.1	50.0	90	Jul. 12	5	Dec. 14	5946	40.08	3.28	Sep. 19-20	47.2	16.9	Mar. 3-4	77	77	56	67	11.0	S	*58	S	Sep. 12	60	5.7	110	111	145	119	12	25	39	1	24	136	0
SOUTH CAROLINA																																				
Charleston	74.5	52.9	63.7	97	Jul. 2	17	Dec. 14+	2545	52.41	5.81	Jul. 28-29	.5	.5	Mar. 11	86	87	55	72	8.4	NNE	52	NW	Sep. 11	71	5.7	109	117	140	[illegible]	0	[illegible]	22	50	0	56	0
Columbia	74.6	50.4	62.5	100	Jul. 1	16	Dec. 11+	3067	45.07	3.59	Mar. 29-30	3.2	2.8	Mar. 11	80	85	50	61	6.6	SW	35	NNE	Jul. 3+	68	5.4	119	120	127	99	1	54	32	94	0	73	0
Florence	73.3	50.8	62.0	97	Jun. 24	15	Dec. 14	3023	47.65	4.55	Jul. 28-29	6.2	4.5	Mar. 11-12	81	84	51	65	7.6	S	*37	NNE	Jan. 30	--	5.3	126	116	124	102	2	59	51	62	[illegible]	66	0
Greenville	70.5	49.8	60.2	98	Jul. 3	11	Dec 22	3563	48.46	3.39	Jul. 5-6	17.5	6.0	Mar. 11	74	78	52	61	7.4	NE	37	W	Mar. 22	64	5.7	111	110	145	115	1	49	[illegible]	62	[illegible]	[illegible]	0
Spartanburg	69.7	49.0	59.4	96	Jul. 3	13	Dec. 22+	3646	49.89	3.12	Sep. 6-7	17.0	5.8	Mar. 2-3	--	--	--	--	8.5	---	*46	WNW	Jun. 24	--	---	---	---	---	117	1	54	23	16	[illegible]	[illegible]	0
SOUTH DAKOTA																																				
Huron	54.8	30.5	42.7	103	Jul. 28+	-25	Jan. 5	8855	18.39	2.21	Aug. 24-25	42.3	7.8	Nov. 27-28	83	88	63	63	12.6	SSE	65	SE	Jun. 19	67	5.9	117	96	153	85	[illegible]	45	21	38	101	186	[illegible]
Rapid City	60.3	34.3	47.3	105	Jul. 20	-15	Mar. 3	7216	11.23	1.40	May 23-24	31.3	3.5	Feb. 8-9	68	46	47	63	12.0	NNW	56	NW	Jun. 20	62	5.6	122	98	146	83	[illegible]	[illegible]	[illegible]	44	62	65	25
Sioux Falls	55.2	33.5	44.4	99	Aug. 2	-25	Jan. 5	8191	27.51	1.91	Aug. 27-28	46.8	11.8	Jan. 1-2	72	77	57	57	10.6	NW	*46	WNW	Nov. 28	--	5.8	111	105	150	88	10	39	28	24	93	[illegible]	39
TENNESSEE																																				
Bristol	65.9	44.5	55.2	93	Sep. 6	1	Feb. 15	4705	37.76	2.14	Aug. 19	47.7	13.0	Mar 9	80	85	56	63	6.4	NE	*40	N	Aug. 19	--	6.4	79	119	168	[illegible]	10	42	53	9	16	118	0
Chattanooga	68.9	47.6	58.3	96	Sep. 6	8	Mar. 5	4047	44.51	3.38	Mar. 2-3	21.8	8.7	Feb. 13	83	89	57	63	6.5	S	45	SW	Jun. 24	59	6.1	98	116	152	114	4	45	46	58	5	91	0
Knoxville	67.8	47.8	57.8	96	Sep. 6	6	Mar. 5	4180	40.17	2.07	Jul. 10-11	54.4	17.5	Feb. 13	77	83	57	60	7.4	NE	61	SW	Apr. 26	47	6.5	77	116	173	[illegible]	9	44	44	40	8	99	0
Memphis	70.1	50.7	60.4	99	Aug. 5	12	Dec. 22	3709	49.43	3.19	Aug. 20-21	21.7	6.5	Jan. 5-6	75	80	56	59	8.6	S	45	W	May 20	64	5.8	110	109	147	108	5	53	9	70	7	75	0
Nashville	68.0	46.8	57.4	99	Sep. 7	5	Dec. 22+	4380	42.42	4.91	Jun. 16-17	38.7	7.4	Feb. 18	82	88	[illegible]	64	7.0	S	55	N	Jun. 29	57	6.2	94	114	158	110	10	53	31	52	16	104	6
Oak Ridge (R)	66.6	46.2	56.4	96	Aug. 7	6	Dec. 22	4436	54.32	7.48	Aug. 10-11	42.5	12.0	Mar. 9	--	--	--	--	4.5	---	*47	---	Jun. 16	--	5.9	110	102	154	119	9	50	44	28	7	99	0
Oak Ridge Area Sta.	66.4	46.1	56.3	95	Aug. 7	4	Mar. 5+	4387	45.47	3.74	Jul. 10-11	----	----	----	--	--	--	--	5.1	SW	--	---	---	--	---	---	---	---	120	---	---	--	27	8	97	0
TEXAS																																				
Abilene	75.5	52.3	63.9	105	Jun. 21+	9	Feb. 25	2942	25.09	3.74	Jul. 5-6	1.2	1.2	Feb. 24	69	78	52	46	10.7	SSE	52	W	Feb. 9	69	4.8	161	90	115	70	1	40	7	115	[illegible]	67	0
Amarillo	67.9	42.9	55.4	103	Jun. 20	-4	Jan. 6	4687	36.67	6.15	Jun. 9-10	22.9	6.7	Jan. 5	68	76	49	45	12.3	S	66	W	Feb. 9	78	4.5	167	98	101	85	5	50	26	48	23	118	3

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset			Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	Max. temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:00a E. S. T.	7:00a E. S. T.	1:00p E. S. T.	7:00p E. S. T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy					90° and above	32° and below	32° and below	Zero and below
TEXAS (Cont'd.)																																				
Austin	76.9	57.4	67.2	103	Jul. 29	22	Feb. 25	2086	35.82	7.22	Oct. 28-29	T	T	Feb. 24	80	87	60	57	9.5	SSE	36	NW	Sep. 24+	60	5.9	102	116	148	93	0	35	31	113	0	23	0
Brownsville	81.6	64.1	72.9	99	Jul. 29+	29	Feb. 25	713	26.30	2.05	Oct. 17	T	T	Feb. 12	88	91	62	70	10.8	SE	52	SE	Apr. 13	59	5.8	93	139	134	78	0	19	31	109	0	1	0
Corpus Christi	79.1	61.7	70.4	101	Jul. 30	27	Feb. 25	1205	44.35	7.25	Oct. 16-17	T	T	Feb. 12	86	90	66	71	11.4	SSE	42	NE	Oct. 16	62	6.0	91	115	157	100	0	43	34	100	0	4	0
Dallas	74.6	55.1	64.9	103	Jul. 13	16	Feb. 25	2758	41.74	4.78	Jul. 13-14	1.8	1.6	Feb. 24-25	70	80	57	53	11.4	S	61	NW	Oct. 13	61	5.2	141	85	140	82	1	41	8	106	2	45	0
El Paso	77.3	50.7	64.0	109	Jul. 3+	18	Feb. 25	2718	9.12	1.75	Jul. 8	12.2	6.0	Dec. 8-9	52	33	26	41	11.2	N	69	W	Feb. 3	83	3.6	200	104	62	42	4	23	0	113	0	67	0
Fort Worth	75.2	54.4	64.8	104	Jun. 15	15	Feb. 25	2823	24.97	1.80	Dec. 6-7	1.9	1.0	Feb. 24	74	83	57	54	12.7	S	*55	NNW	Jul. 18	--	5.2	141	89	136	87	1	39	13	111	4	59	0
Galveston (U)	73.3	63.7	68.5	96	Jul. 27	27	Feb. 25	1517	31.89	2.03	Oct. 29-30	2.2	2.2	Feb. 12-13	--	--	--	--	12.1	---	43	+NE	Feb. 12	63	---	---	---	---	98	1	0	0	9	0	5	0
Galveston	74.0	63.1	68.6	95	Jul. 27	27	Feb. 25	1559	35.98	3.05	Oct. 18-19	2.0	2.0	Feb. 12-13	77	79	69	70	10.1	SE	--	---	----	--	5.8	116	103	147	95	1	52	29	32	0	6	0
Houston (U)	76.7	60.8	68.8	100	Jul. 29	27	Feb. 25+	1615	59.82	8.23	Jun. 25-26	3.0	3.0	Feb. 12	AP 87	AP 90	AP 64	AP 68	9.7	+S	43	+NW	Feb. 17	59	6.0	97	118	151	116	1	66	29	89	0	12	0
Houston	77.2	59.7	68.5	98	Jul. 30+	26	Feb. 25	1637	53.69	8.51	Jun. 25-26	4.4	4.4	Feb. 12	87	90	64	68	10.3	SSE	--	---	----	--	6.3	96	101	169	119	1	69	42	91	0	12	0
Laredo	84.1	62.1	73.1	110	Jul. 30	26	Feb. 25	1199	22.44	2.41	Aug. 10-11	T	T	Feb. 12	71	82	53	46	10.3	SE	*46	NE	Sep. 24	--	5.5	123	108	135	90	0	37	26	176	0	3	0
Lubbock	72.6	45.3	59.0	103	Jun. 27+	-8	Feb. 25	3903	22.19	3.90	Oct. 17-18	23.5	7.0	Feb. 24	67	78	49	43	13.8	S	*58	WSW	Feb. 9	--	4.2	176	105	85	66	6	40	22	90	14	110	1
Midland	75.8	50.2	63.0	106	Jun. 21+	11	Feb. 25	2978	14.58	2.24	Jul. 5-6	7.6	2.7	Dec. 9-10	60	75	46	37	11.3	SSE	*67	WSW	Feb. 9	--	4.6	166	98	102	61	5	33	21	110	5	74	0
Port Arthur	76.2	58.5	67.4	98	Jul. 29	27	Feb. 26+	1830	52.82	7.08	Aug. 13-14	4.4	4.4	Feb. 12-13	88	91	66	71	10.9	ESE	56	SW	Feb. 9	57	6.2	88	118	160	108	1	62	42	88	0	14	0
San Angelo	78.8	53.1	66.0	111	Jul. 29	11	Feb. 25	2595	14.74	2.73	Oct. 15-16	1.5	1.0	Feb. 11	68	79	49	44	11.9	S	*60	WNW	Oct. 28	--	4.8	163	96	107	61	1	33	9	143	2	55	0
San Antonio	78.1	57.7	67.9	104	Jul. 30	21	Feb. 25	1824	29.76	5.05	Aug. 14-15	T	T	Dec. 13+	80	87	60	57	9.8	SSE	47	NW	Feb. 9	57	5.8	101	121	144	97	0	37	37	120	0	21	0
Victoria	78.2	59.3	68.8	98	Jul. 29+	24	Feb. 25	1527	50.28	8.67	Oct. 18-19	4.0	4.0	Feb. 12	--	91	64	67	10.8	SSE	±56	NW	Feb. 17	--	6.1	93	120	153	95	1	55	32	100	0	13	0
Waco	76.6	55.9	66.3	105	Jul. 27	19	Feb. 25	2394	29.63	2.86	Oct. 18	.4	.4	Feb. 24	76	86	58	55	12.8	SSE	*52	NNW	Oct. 13	--	5.5	124	98	144	81	0	39	19	125	0	40	0
Wichita Falls	74.3	50.9	62.6	106	Jul. 27+	7	Feb. 25	3360	28.78	2.13	Oct. 17-18	9.9	2.6	Jan. 5	71	81	53	50	10.6	S	*46	WNW	Oct. 18	--	4.8	149	104	113	72	4	59	14	102	9	79	0
UTAH																																				
Milford	66.1	34.5	50.3	104	Jul. 26	-19	Jan. 3	6166	6.78	.93	Oct. 9-10	22.3	2.9	Mar. 30-31	--	--	38	30	----	---	--	---	----	--	4.6	163	100	103	58	8	30	0	72	26	168	8
Salt Lake City	64.8	38.9	51.9	107	Jul. 26	-4	Feb. 29	5885	12.37	1.04	Aug. 22	54.3	5.3	Feb. 13	62	67	46	42	8.4	SSE	40	SW	Aug. 22	72	5.3	127	108	131	85	15	32	11	69	24	136	4
Wendover	64.3	42.7	53.5	103	Jul. 19	6	Jan. 5+	5564	2.47	.31	Sep. 1	5.0	3.1	Feb. 25-26	--	48	37	31	----	---	--	---	----	--	4.7	161	94	111	40	1	25	5	64	26	125	0
VERMONT																																				
Burlington	54.1	34.4	44.3	92	Sep. 8	-16	Dec. 28	7829	30.85	2.48	Sep. 12	54.0	6.3	Feb. 14	80	78	60	69	7.5	SSW	37	S	Apr. 17	54	7.1	56	99	211	141	16	17	15	5	80	163	19
VIRGINIA																																				
Lynchburg	65.4	45.5	55.5	96	Jul. 23	9	Dec. 23	4668	35.91	3.47	May 7-8	45.7	12.8	Feb. 13-14	--	79	51	61	7.7	---	38	N	Jun. 12	63	5.6	122	111	133	113	11	48	25	29	14	109	0
Norfolk	68.0	50.5	59.3	100	Jun. 24	15	Dec. 24	3,63	41.74	4.31	Sep. 11-12	12.5	3.9	Mar. 2-3+	75	76	56	66	10.8	SW	73	W	Sep. 12	62	5.7	121	101	144	112	4	42	20	38	6	78	0
Richmond	67.7	45.5	56.6	99	Jul. 23	10	Dec. 13	4368	46.00	3.11	Sep. 11-12	32.8	8.7	Feb. 13-14	81	83	50	66	7.8	S	38	NW	Dec. 12	64	6.0	109	100	157	105	7	40	20	39	10	107	0
Roanoke	66.0	45.1	55.6	97	Aug. 3	6	Dec. 22	4691	38.95	2.92	May 27	72.5	17.4	Mar. 2-3	73	77	49	57	8.3	SE	--	---	----	--	5.9	99	127	140	115	14	39	15	41	16	111	0
WASHINGTON																																				
Olympia	60.1	38.7	49.4	100	Aug. 9+	14	Mar. 1+	5700	50.45	2.38	Nov. 19-20	23.5	8.0	Nov. 20	85	91	78	65	7.0	SW	*39	WNW	May 16	--	7.5	44	88	234	163	4	5	95	11	0	92	0
Seattle-Tacoma	58.3	43.2	50.8	99	Aug. 9	24	Mar. 3	5291	39.28	2.03	Nov. 19-20	12.5	5.2	Nov. 20	79	87	76	65	9.7	S	*37	SSW	Apr. 13	--	7.3	57	78	231	166	3	11	46	5	0	45	0
Seattle (U)	59.6	46.8	53.2	97	Aug. 9+	29	Mar. 3+	4407	36.62	2.29	Nov. 19-20	11.0	5.5	Mar. 3	AP 74	AP 82	AP 70	AP 58	AP 7.2	AP SSE	62	SW	Feb. 14	44	---	--	--	---	149	3	--	--	4	0	14	0
Spokane	57.1	36.1	46.6	102	Jul. 18	-3	Jan. 18+	7120	17.69	1.41	Nov. 23-24	32.5	3.2	Jan. 15-16	66	75	62	50	8.4	SSW	37	SW	Jun. 16+	60	6.4	90	79	197	112	14	8	45	26	54	150	7
Stampede Pass (R)	45.0	32.8	38.9	85	Jul. 16	1	Mar. 2	9519	90.28	2.64	Feb. 14-15	523.1	22.7	Nov. 19-20	--	90	82	79	----	---	--	---	----	--	7.4	73	52	241	198	94	2	238	0	109	194	0
Tatoosh Island (R)	52.9	45.3	49.1	76	Aug. 8	27	Mar. 3	5709	75.54	3.16	Jan. 23-24	3.6	3.6	Mar. 3	84	85	83	80	16.1	E	73	SW	Apr. 13+	38	8.0	39	67	260	185	1	6	52	0	0	3	0

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

YEAR 1960

State and Station	Temperature								Precipitation						Relative humidity				Wind																	
	Averages			Extremes								Snow, Sleet									Fastest mile					Number of days										
																										Sunrise to sunset							Max. temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date	Degree days	Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:00a E. S. T.	7:00a E. S. T.	1:00p E. S. T.	7:00p E. S. T.	Average hourly speed	Prevailing direction	Speed	Direction	Date	Percent of possible sunshine	Average sky cover sunrise to sunset	Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
WASHINGTON (Cont'd.)																																				
Walla Walla (U)	62.8	43.9	53.4	110	Jul. 18	8	Jan. 19+	5121	15.02	0.87	May 19-20	19.6	4.1	Jan. 10-11	--	--	58	--	5.2	†S	43	E	Feb. 6	62	6.1	115	71	180	100	7	7	20	35	42	82	0
Yakima	62.5	34.9	48.7	105	Jul. 18+	-6	Jan. 18	6412	7.59	.85	Nov. 23-24	18.7	4.7	Jan. 7-8	67	78	55	43	7.1	WNW	*40	WSW	Mar. 15+	--	6.0	110	84	172	72	5	4	22	38	36	164	5
WEST VIRGINIA																																				
Charleston	64.1	44.1	54.1	92	Sep. 5+	2	Dec. 22	4954	37.37	2.42	Jul. 10	48.4	4.8	Mar. 2-3	78	81	55	62	6.0	WSW	*32	NNW	Aug. 10	--	7.3	42	125	199	143	13	37	121	8	24	112	0
Huntington (U)	65.5	44.8	55.2	94	Sep. 5	2	Dec. 22	4778	34.82	2.50	Jun. 11-12	35.6	12.0	Feb. 13-14	--	--	--	--	----	---	--	---	---	--	---	---	---	---	120	11	--	---	35	20	113	0
Parkersburg (U)	63.7	43.3	53.5	94	Jul. 26	2	Dec. 22	5205	32.59	2.51	Jun. 11-12	39.4	10.1	Feb. 13-14	--	--	--	--	5.8	---	30	NW	Jun. 30+	45	6.7	77	90	199	142	11	39	14	23	28	124	0
WISCONSIN																																				
Green Bay	52.8	33.6	43.2	92	Sep. 7	-9	Mar. 8	8205	28.27	2.43	May 6-7	19.6	3.1	Feb. 21	85	87	68	73	11.8	SW	56	W	Apr. 11	47	6.2	89	120	157	116	7	41	26	4	94	163	14
La Crosse	55.4	37.4	46.4	95	Jul. 22	-9	Dec. 23+	7415	33.78	2.72	May 16-17	19.1	3.8	Feb. 20-21	--	83	61	63	10.1	S	*52	SSW	May 2	--	6.3	103	86	177	107	7	38	26	12	85	152	15
Madison	51.8	34.4	44.6	94	Sep. 7	-14	Mar. 6	7827	38.79	3.04	Jul. 2	34.4	5.7	Feb. 20-21	82	84	65	68	9.7	SW	51	SW	Nov. 15	55	6.3	92	105	169	120	10	43	25	7	88	159	27
Milwaukee	53.7	36.1	44.9	93	Sep. 7	-9	Dec. 23+	7624	40.71	3.59	Aug. 2-3	75.0	16.7	Feb. 10	84	86	69	73	11.7	WNW	58	NE	Feb. 10	56	6.1	106	107	153	139	14	46	30	6	[illegible]	152	7
WYOMING																																				
Casper	58.1	32.1	45.1	96	Jul. 23+	-19	Mar. 3+	7625	7.34	.57	Aug. 17	64.8	8.7	Nov. 3-4	59	66	44	41	13.2	SW	*46	SW	Nov. 25+	--	5.7	116	103	147	81	19	31	8	28	45	176	20
Cheyenne	59.3	33.7	46.5	96	Jul. 21	-19	Feb. 28	7196	8.22	.89	Jun. 10-11	31.9	5.3	Apr. 28-29	61	63	41	43	14.1	WNW	66	W	Nov. 1	65	5.7	107	127	132	89	15	51	27	30	50	163	14
Lander	58.0	31.1	44.6	98	Aug. 21+	-20	Jan. 20	7911	9.09	1.32	Oct. 9-10	78.6	10.4	Apr. 28-29	56	63	44	42	6.6	†SW	61	SW	Jun. 20	73	5.1	130	131	105	52	21	28	4	30	59	176	27
Sheridan	59.1	32.6	45.9	103	Jul. 19	-18	Feb. 27	7495	8.23	1.27	Aug. 16-17	45.1	8.6	Dec. 20-21	62	72	50	47	8.0	NW	63	NW	Aug. 15	66	5.6	120	104	142	78	13	27	8	38	[illegible]	175	22

Data from airport unless otherwise indicated.
U indicates Urban, R indicates Rural, sites. Where certain elements are from the airport, these are indicated by AP above each value.

* Data entered in column headed "Fastest Mile" is the fastest observed one minute wind speed and its direction. This station is not equipped with automatic recording wind instruments.

+ Also on earlier dates.

† Wind direction to 8 compass points only.

‡ Peak gust.

# Number of days maximum 70 F or above for Alaskan stations

b Computed as of noon local time.

c Sun below horizon November 18 - January 24.

d Maximum hourly average.

e Computed as of 8 00 am local time.

k Sun below horizon November 26 - January 15.

m 1960-1961

NORMALS, MEANS AND EXTREMES

ALABAMA							77	112	-18							0.00	20.33																								
Anniston (1952)	599	56.6	34.9	91.2	68.2	62.5	47	105	-3	611	2820	6.09	2.58	52.20	16.25	.02	6.98	0.9	1.8	11.0	82	65	78	83	57	67	6.8	3.9	54	50	69	143	114	108	120	*	61	6	54	51	*
Birmingham	610	55.5	34.9	90.2	69.0	62.5	17	106	[illegible]	622	2780	6.31	2.71	53.72	15.25	T	5.89	.4	1.2	4.5	s84	s62	s69	s86	s56	s65	9.1	6.2	65	38	60	98	122	145	117	*	56	7	67	54	0
Huntsville	605	----	----	----	----	----	2	99	7	---	----	----	----	-----	8.31	2.09	3.50	.3	3.4	6.2	s84	s67	s72	s87	s53	s58	8.0	5.8	--	--	-	97	111	157	119	3	56	13	85	79	0
Mobile (U)(1952)	10	61.4	44.8	89.8	74.0	68.1	81	103	-1	417	1529	7.94	3.07	62.25	26.67	.00	12.98	.1	.2	----	--	--	--	--	--	--	10.1	8.0	98	51	59	110	138	117	119	*	64	15	17	12	*
Mobile	211	62.2	43.2	89.4	72.0	67.3	19	101	11	416	1612	8.97	3.75	67.75	19.29	.05	13.36	.2	.4	3.5	86	62	76	90	64	78	11.6	7.7	--	--	--	105	121	139	124	*	86	32	70	18	0
Montgomery (U)	201	59.1	41.5	90.6	72.4	66.3	†	†	†	482	1954	6.10	2.15	50.95	†	†	†	†	†	†	†	†	†	†	†	†	----	---	†	†	†	†	†	†	†	†	†	†	†	†	†
Montgomery	195	59.7	38.7	91.3	71.0	65.4	16	105	8	517	2277	6.50	2.36	53.85	21.32	.32	8.81	.2	.2	2.5	87	61	69	89	57	68	7.7	5.9	60	50	66	107	108	150	[illegible]	*	63	21	87	35	0
ALASKA (Northern)							71	100	-76							.00																									
Anchorage	90	20.4	5.5	65.4	49.1	35.3	38	86	-38	1612	10789	2.71	.40	14.29	5.91	.00	2.06	11.0	60.7	17.7	74	71	73	84	74	62	5.2	5.6	--	39	43	71	85	209	104	21	1	26	#14	201	36
Barrow	22	-8.5	-21.6	46.0	33.3	10.1	40	78	-56	2480	19994	.85	.10	4.12	2.14	.00	1.00	2.1	26.8	15.0	63	65	62	95	92	89	10.8	11.7	--	--	--	a61	a52	a184	69	5	*	65	#*	323	169
Barter Island	39	-8.4	-22.5	47.0	34.6	10.6	13	72	-59	2496	19803	1.18	.19	7.20	4.91	T	2.23	3.6	46.8	17.0	69	69	69	93	90	87	13.7	10.1	--	--	--	b44	b77	b192	98	13	*	73	#*	307	166
Bethel	125	14.6	-1.1	62.4	46.6	29.6	18	86	-52	1801	12880	4.02	.55	18.20	12.37	.02	2.40	10.5	59.5	18.7	78	78	77	93	87	69	11.7	9.6	--	--	-	59	66	240	138	20	2	28	#9	225	77
Fairbanks	436	-.3	-19.2	70.5	51.2	26.2	31	93	-66	2359	14158	2.26	.29	11.93	6.88	T	2.33	13.6	59.7	15.5	68	68	68	88	72	52	3.2	6.0	--	--	--	72	88	205	108	20	8	20	#48	232	120
Galena (1952)	120	-.9	-17.7	69.2	51.0	25.2	5	88	-64	2403	14538	2.84	.18	14.62	4.45	.08	2.34	8.8	51.2	9.0	69	70	69	82	73	59	6.0	8.2	--	--	--	72	77	216	126	17	5	11	#23	232	113
King Salmon	44	21.7	6.5	62.6	46.6	34.1	18	88	-40	1575	11235	4.01	.84	22.50	6.44	.00	1.69	6.8	41.5	9.5	78	79	77	91	83	64	11.6	10.3	--	--	--	48	68	249	148	13	1	32	#13	205	53
Kotzebue	10	.6	-13.7	58.5	46.7	20.6	18	85	-48	2220	16150	1.95	.27	8.03	5.18	T	1.78	5.4	40.5	8.6	71	71	71	88	86	78	14.6	12.8	--	--	--	88	71	206	112	12	*	22	#4	253	119
McGrath	334	1.1	-18.5	68.0	49.3	25.5	18	88	-64	2285	14390	3.63	.49	19.17	6.26	T	2.39	17.1	85.6	15.2	70	68	71	87	75	57	2.6	5.7	--	--	--	65	67	233	142	25	6	11	#29	231	113
Nome	13	12.9	-1.7	55.4	43.8	26.3	14	81	-42	1841	14086	3.76	.59	18.72	7.82	T	2.38	11.7	60.7	8.4	78	79	78	91	87	83	11.5	9.6	--	43	29	79	69	217	130	20	1	23	#3	239	88
Northway (1956)	1713	-8.5	-25.7	69.8	48.5	22.4	14	88	-72	2545	15506	2.89	.22	11.35	6.42	T	3.91	7.7	40.1	11.5	68	67	65	87	67	50	3.0	5.9	--	--	--	45	84	236	102	11	12	17	#37	247	138
ALASKA (Southern)							77	99	-51																																
Annette	110	38.6	30.5	62.5	51.0	45.6	13	90	1	942	7096	14.38	1.49	96.85	31.87	.71	7.59	12.7	49.1	14.2	78	77	75	91	80	73	13.8	8.7	--	--	--	43	57	265	221	16	2	18	#15	79	0
Cold Bay	90	33.5	24.7	54.1	45.5	38.4	16	78	-9	1113	9687	4.38	1.34	33.28	9.97	.02	2.75	7.3	46.8	9.7	87	87	84	93	91	82	18.0	15.8	--	--	--	12	49	304	207	14	0	29	#*	163	2
Cordova	40	32.4	17.6	60.1	46.4	38.6	17	84	-33	1240	9615	15.56	4.19	98.83	27.72	.08	7.92	25.4	126.6	22.9	83	82	81	91	86	79	4.3	3.6	--	--	--	50	52	263	216	37	2	12	#8	191	19
Juneau (U)	80	33.5	25.5	61.9	50.1	42.5	--	--	--	1101	8187	13.03	4.13	90.25	-----	----	----	----	----	----	--	--	--	--	--	--	---	---	--	--	--	--	--	---	---	--	--	--	--	---	---
Juneau	17	31.2	21.1	62.4	47.0	40.6	17	84	-21	1203	8888	8.47	2.98	56.05	13.29	.27	4.66	17.9	90.5	31.0	79	79	77	88	79	68	8.4	7.6	--	29	27	43	38	284	223	26	*	21	#21	146	9
St. Paul Island	22	29.9	22.9	49.3	42.4	35.2	43	64	-26	1197	10839	3.49	1.02	24.28	9.32	.08	1.93	12.4	53.0	13.0	87	87	86	96	96	91	---	---	--	--	--	23	69	273	200	18	*	41	#0	189	5
Shemya	122	----	----	----	----	----	15	63	17	----	----	----	----	-----	7.96	.14	2.40	12.7	62.5	15.3	85	84	83	96	96	91	20.6	13.1	E139	--	--	--	--	---	207	21	--	--	#0	123	0
Yakutat	28	22.0	19.9	58.6	46.8	39.3	11	86	-22	1194	9354	19.93	4.96	134.45	43.88	.52	7.13	37.9	209.7	32.4	81	81	80	96	84	78	9.0	7.2	--	--	--	41	17	277	224	49	1	31	#5	171	10
ARIZONA							66	127	-33							.00	5.95																								
Flagstaff	6993	38.9	11.7	79.2	51.1	44.6	11	94	-16	1231	7525	2.60	.53	18.53	6.60	T	3.11	18.5	67.2	22.0	--	--	--	--	--	--	---	---	--	--	--	175	92	98	69	17	46	4	1	209	9
Phoenix (U)	1083	64.3	38.2	103.5	77.5	70.5	--	--	--	425	1492	.96	.06	7.12	-----	----	----	----	----	----	--	--	--	--	--	--	---	---	--	--	--	---	--	---	---	--	--	--	--	---	---
Phoenix	1109	64.8	34.5	105.1	75.1	69.4	23	118	17	474	1698	1.00	.06	7.19	5.56	.00	3.07	T	T	.6	74	47	39	52	31	23	4.4	6.2	75	77	84	209	84	74	34	0	22	2	163	17	0
Prescott	5014	50.2	20.4	90.9	61.0	55.2	18	103	-5	921	4533	3.70	.23	16.03	9.61	.00	3.08	6.8	17.0	12.4	73	50	47	60	31	32	7.2	8.4	72	71	73	182	100	83	61	6	46	5	48	130	*
Tucson	2584	63.1	36.3	99.4	73.0	67.6	20	111	16	474	1776	2.15	.21	10.69	7.93	.00	3.93	.4	1.2	6.4	63	40	34	57	33	29	7.2	7.5	59	80	76	193	93	79	49	1	39	1	146	22	0
Winslow	4880	46.2	19.2	92.6	61.8	55.0	29	106	-18	1001	4702	1.62	.29	7.84	2.72	.00	2.12	2.5	8.2	7.8	69	49	41	57	28	26	7.7	9.2	--	--	--	178	94	93	53	3	36	4	72	132	2
Yuma	199	67.2	43.3	107.7	81.5	74.7	10	120	28	318	951	.64	.01	3.40	2.68	.00	2.09	.0	.0	.0	54	36	26	48	29	21	7.0	9.6	54	85	92	255	65	45	14	0	7	2	187	3	0
ARKANSAS							70	120	-29							.00	12.00																								
Fort Smith	499	50.6	29.4	94.2	70.4	62.0	15	111	-9	775	3188	5.06	2.56	41.67	14.01	.06	7.13	2.0	5.2	5.6	s82	s65	s68	s88	s54	s54	8.5	6.7	58	42	70	131	93	141	92	2	60	11	84	72	*
Little Rock	257	51.1	32.4	92.7	71.1	62.4	19	107	-5	719	2982	5.16	2.81	47.53	12.53	T	7.71	2.4	4.9	11.3	80	66	68	86	56	60	9.1	7.3	61	44	56	118	103	144	104	1	60	14	74	48	*
Texarkana	361	56.3	35.5	94.6	71.1	65.1	18	106	-3	600	2362	5.30	2.79	50.74	15.33	.04	6.55	1.2	1.8	4.5	85	67	71	89	56	58	7.8	6.5	--	--	--	---	---	---	98	1	65	18	85	39	*
CALIFORNIA							76	134	-45							.00	26.12																								
Bakersfield	494	57.3	36.5	101.1	67.3	65.0	23	115	21	561	2115	1.16	.01	6.40	4.61	.00	1.68	T	T	T	86	71	58	48	30	19	4.8	7.1	--	--	--	202	81	82	38	0	3	20	110	15	0
Beaumont (U) (1952)	2589	57.4	35.6	94.7	57.4	60.1	13	110	11	574	2840	3.67	.09	17.86	8.63	.00	4.16	1.9	2.4	7.1	63	44	44	63	26	25	8.7	6.8	--	--	--	184	95	86	49	*	9	51	83	32	0
Bishop	4108	53.6	22.2	96.9	54.1	56.0	13	109	-6	840	4222	1.12	.10	5.41	5.03	.00	3.32	4.3	7.4	9.0	--	--	--	--	--	--	---	---	--	--	--	202	90	73	29	3	14	*	101	146	*
Blue Canyon	5280	43.8	28.5	77.7	57.9	50.1	17	93	5	893	5719	9.83	.03	53.87	45.12	.00	9.31	54.2	249.2	38.5	--	65	--	--	31	--	11.3	7.4	70	--	--	172	68	125	88	41	13	68	1	103	0
Burbank	699	65.2	39.9	87.3	59.0	62.8	29	111	21	396	1808	3.17	T	13.99	13.84	.00	7.76	.3	.3	4.7	72	55	47	82	50	41	4.0	5.3	--	--	--	187	104	74	38	*	4	31	47	4	0
Eureka (U)	43	53.6	40.8	60.6	52.2	52.3	50	85	22	552	4632	6.20	.09	36.35	13.97	.00	5.83	.2	.2	3.0	--	--	--	--	--	--	7.0	6.8	56	40	51	82	103	180	118	*	5	48	0	5	0
Fresno	331	53.5	35.9	100.1	64.1	63.0	21	111	18	629	2532	1.72	T	9.37	6.73	.00	2.44	T	T	.1	93	80	66	61	37	20	4.9	7.1	43	51	98	198	73	94	46	0	5	38	102	25	0
Long Beach	34	----	----	----	----	----	17	107	28	---	----	----	----	-----	9.05	.00	6.86	T	T	T	--	--	--	--	--	--	---	---	--	--	--	154	134	77	28	0	3	70	9	1	0
Los Angeles (U)	312	64.6	45.4	83.2	61.7	63.9	20	110	28	328	1451	3.47	T	14.64	12.42	.00	6.11	T	T	.3	65	46	52	84	49	53	6.8	5.4	49	71	81	185	106	74	37	0	6	17	18	*	0
Los Angeles	99	63.3	43.0	74.4	60.8	60.9	24	108	23	378	2015	2.85	T	12.47	8.14	.00	6.19	T	T	T	75	57	62	85	65	67	6.2	6.8	62	--	--	140	116	109	37	0	3	52	3	1	0
Mount Shasta (R)	3544	41.4	24.1	84.8	49.5	49.3	18	103	-2	998	5913	5.40	.13	33.89	17.60	.00	5.90	35.8	107.6	37.4	--	77	75	--	39	29	---	---	--	--	--	162	84	119	88	19	14	8	20	134	*
Oakland	3	56.0	38.4	72.0	53.4	56.5	32	107	23	552	3163	3.51	.01	17.74	11.29	.00	3.23	T	T	1.0	86	74	68	88	69	62	6.2	8.8	--	--	--	145	120	100	63	*	2	18	4	6	0
Red Bluff	341	53.3	36.9	98.9	67.4	63.2	16	114	21	617	2546	4.23	.02	21.68	11.38	.00	4.00	1.3	1.9	9.9	81	71	59	48	29	18	8.9	8.1	63	52	96	179	66	120	71	1	12	15	98	23	0
Sacramento (U)	23	52.1	38.3	92.0	58.6	60.9	27	112	22	614	2600	3.31	T	16.44	12.20	.00	3.52	†T	†T	†T	†90	†82	†70	†77	†47	†29	†10.1	†10.5	†70	†43	†97	†201	†64	†100	60	†0	†5	†31	66	9	0
Sacramento	17	52.4	36.2	92.0	57.2	60.0	17	---	--	642	2822	3.01	T	15.02	-----	----	------	.2	.2	4.0	90	81	69	76	46	28	7.3	8.3	70	44	96	225	72	68	---	*	4	21	--	---	---
Sandberg (R)	4517	46.0	33.6	85.1	62.7	55.3	28	102	3	781	4243	2.85	.04	12.51	11.12	.00	4.09	9.6	26.2	38.5	--	59	--	--	25	--	17.5	13.1	--	--	--	210	80	75	40	7	4	80	21	55	0
San Diego	19	64.3	45.5	75.5	63.1	62.4	20	104	29	317	1574	2.57	.01	10.94	7.60	.00	3.07	T	T	T	76	58	60	86	68	64	5.6	6.7	51	68	67	154	119	92	43	0	3	30	3	*	0
San Francisco (U)	52	55.4	44.8	64.4	53.4	56.7	24	97	30	462	3069	4.07	.01	20.63	11.47	.00	3.65	T	T	T	--	k68	--	--	k75	--	6.8	11.2	47	54	64	---	---	---	67	0	2	0	1	*	0
San Francisco	8	55.8	39.9	69.2	51.5	55.6	33	104	20	530	3421	3.59	.01	17.54	12.30	.00	3.33	T	T	T	87	78	69	90	69	66	7.0	13.8	62	--	--	161	107	97	62	0	2	21	3	7	0
San Jose (1950)	95	58.0	40.5	80.8	54.5	59.3	50	106	20	487	2410	2.53	T	12.69	12.38	.00	4.56	T	T	1.0	--	--	66	--	--	50	6.6	7.1	43	54	87	210	84	71	59	*	*	23	13	14	0
Santa Catalina(1952)	1568	59.0	46.7	77.0	58.3	60.1	8	102	29	375	2249	2.97	T	12.88	7.81	.00	2.68	.4	.5	2.0	72	65	67	65	58	54	---	---	--	--	--	190	81	94	45	*	*	112	10	*	0
Santa Maria	238	62.7	38.0	72.6	51.7	57.1	18	104	21	453	2934	2.71	.03	13.56	5.88	.00	3.07	T	T	T	82	61	62	93	66	64	7.1	6.3	--	--	--	173	111	81	46	0	2	88	4	15	0
COLORADO							73	118	-60							.00	8.05																								
Alamosa	7536	36.3	-2.5	81.3	46.8	41.4	15	91	-50	1491	8659	1.10	.17	6.24	2.45	T	1.82	4.9	27.5	16.5	75	58	57	82	38	36	---	---	--	--	--	147	138	80	63	12	44	14	1	226	45

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation on ground (feet)	Temperature (°F) Normal (1921-1950) January Daily maximum	January Daily minimum	July Daily maximum	July Daily minimum	Annual	Extremes Length of record yrs	Record highest	Record lowest	Normal degree days (1921-1950) January	Seasonal	Precipitation (inches) (1921-1950) Wettest month	Driest month	Annual	Extremes Wettest month	Driest month	Maximum in 24 hours	Snow, sleet Mean total January	Seasonal	Extreme Maximum in 24 hours	Relative humidity (percent) January 7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	July 7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	Wind Speed (m.p.h.) Mean hourly January	July	Fastest mile	Sunshine (percent of possible) January	July	Annual mean number of days Sunrise to sunset Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max 90° and above	Min 32° and below	0° and below
COLORADO (Cont'd.)																																									
Colorado Springs	6173	40.9	16.6	84.8	57.6	49.1	12	100	-27	1122	6254	2.72	0.22	14.28	5.90	T	3.09	4.6	39.2	18.0	56	40	46	68	34	39	10.4	10.0	--	--	--	140	119	106	87	11	59	23	19	166	7
Denver (U)	5221	42.5	20.3	85.9	61.5	51.4	87	105	-29	1042	5673	2.06	.50	13.43	8.57	.00	6.53	5.9	51.6	23.0	54	37	41	55	27	30	7.6	6.9	65	67	68	146	151	68	84	15	42	4	23	137	7
Denver	5292	41.7	15.6	87.2	58.3	49.8	26	104	-30	1125	6132	2.20	.50	14.22	7.31	T	3.43	8.9	59.3	19.4	60	44	49	66	32	34	9.9	9.1	56	70	70	113	137	115	86	18	42	10	35	153	7
Grand Junction	4849	33.8	14.1	92.5	63.8	52.1	14	102	-14	1271	5796	1.20	.45	9.08	3.18	.00	1.24	8.7	28.3	9.1	77	64	63	46	26	20	5.7	9.8	66	55	78	142	105	118	72	9	39	7	56	138	3
Pueblo	4639	44.9	13.8	89.8	59.9	51.5	20	105	-31	1104	5709	1.81	.38	11.89	6.17	T	3.77	6.5	33.4	16.8	69	46	48	73	35	35	7.6	7.9	80	73	77	136	126	103	72	10	45	9	57	157	9
CONNECTICUT							73	105	-32							.00	12.12																								
Bridgeport	7	36.6	21.8	81.6	63.9	50.5	12	103	-5	1110	5896	4.43	2.83	42.12	13.29	.07	5.84	5.5	22.6	15.0	74	63	69	79	58	71	9.9	7.5	62	--	--	102	106	157	120	6	24	27	8	101	*
Hartford(Bradley Fld.)	169	36.1	17.9	85.6	62.0	50.1	6	101	-17	1178	6068	3.66	2.66	40.57	21.87	.73	12.12	10.0	50.2	13.4	74	59	66	84	55	68	11.2	8.5	51	49	57	89	107	169	132	14	24	34	13	141	5
Hartford	15	35.4	18.5	83.0	62.3	49.7	†	†	†	1178	6139	3.93	2.70	42.43	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
New Haven	6	37.0	21.2	80.1	62.3	49.7	17	100	-8	1113	6026	3.00	4.12	45.10	10.95	.12	5.55	8.9	35.2	17.2	77	65	--	81	68	--	8.1	6.2	57	51	67	101	105	159	134	9	28	30	3	112	*
DELAWARE							68	110	-17							T	7.83																								
Wilmington	78	41.8	24.7	86.7	65.0	54.2	13	102	-1	983	4910	5.28	2.99	44.60	12.09	.16	6.24	5.2	19.9	15.6	77	62	70	81	53	69	9.4	7.5	--	--	--	95	106	164	122	5	31	44	21	103	*
DIST. OF COLUMBIA																																									
Silver Hill Obs.(1953)	284	43.4	27.4	84.6	66.2	55.3	2	101	8	918	4539	5.91	2.58	43.91	9.99	.66	3.03	2.4	11.9	7.5	--	--	--	--	--	--	---	---	--	--	--	---	---	---	120	5	37	--	27	44	0
Washington(U) (1958)	72	44.0	28.9	87.1	68.4	56.8	87	100	-15	884	4258	4.49	2.64	41.44	17.45	.14	7.31	5.9	19.4	25.0	73	56	64	78	52	67	7.7	5.7	62	46	64	125	116	124	124	6	33	12	28	81	*
Washington Nat'l. AP	14	43.8	28.5	86.1	68.4	56.5	19	103	1	893	4333	4.75	2.53	40.57	14.31	.22	6.39	4.2	14.7	14.4	74	57	62	77	53	63	10.8	8.6	78	45	64	101	106	158	115	5	32	13	29	73	0
FLORIDA							71	109	-2							.00	38.70																								
Apalachicola (U)	13	62.2	48.1	87.4	75.1	68.8	31	102	18	352	1307	7.65	2.45	56.18	22.55	.01	11.71	T	T	1.2	87	69	80	85	72	76	8.5	6.7	67	59	64	134	111	120	108	*	73	25	17	1	0
Daytona Beach	31	69.3	49.6	89.8	71.7	70.5	17	102	24	245	868	7.11	2.10	51.18	19.89	.06	9.29	.0	T	T	91	59	80	90	67	82	9.5	7.8	--	--	--	98	138	129	117	0	83	34	62	5	0
Fort Myers	15	75.2	53.9	90.5	73.4	73.9	21	101	28	124	405	9.20	1.21	53.34	16.32	.00	10.85	.0	.0	.0	92	56	79	87	64	81	8.3	6.7	--	--	--	104	156	105	119	0	102	21	121	*	0
Jacksonville (U)	18	65.9	[illegible]	89.6	73.7	69.8	86	104	10	303	1113	7.89	1.57	52.40	23.32	T	9.86	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	122	*	---	--	61	5	0
Jacksonville	24	66.3	45.4	91.4	72.7	69.3	19	105	17	331	1243	7.64	1.62	52.18	19.36	.04	10.17	T	.1	1.5	88	56	74	86	57	75	8.4	7.8	72	58	59	100	127	138	117	*	64	35	88	12	0
Key West (U)	9	75.8	65.8	89.1	78.3	77.6	90	97	41	28	77	6.78	1.54	39.57	23.56	T	19.88	.0	.0	.0	84	69	79	77	68	74	10.3	8.2	91	68	69	140	157	68	112	0	59	*	33	0	0
Key West	5	75.4	65.1	89.2	77.5	77.2	8	95	46	31	89	6.75	1.50	39.21	14.73	.00	8.89	.0	.0	.0	84	69	78	77	66	73	12.8	10.2	127	70	63	109	168	88	115	0	60	*	61	0	0
Lakeland (U)	214	71.5	52.5	90.2	72.2	72.2	20	101	25	185	619	8.16	1.39	51.52	15.67	T	10.12	T	T	T	--	--	--	--	--	--	7.0	5.5	--	62	59	100	155	110	125	0	98	19	85	.	0
Melbourne (1953)	26	71.3	53.8	89.1	[illegible]	72.4	16	100	22	169	537	7.68	2.11	52.40	19.68	.11	8.56	.0	.0	.0	92	62	82	87	67	82	---	---	--	--	--	81	155	129	119	*	88	14	60	*	0
Miami (U)	8	74.4	62.6	86.8	76.4	75.3	49	95	27	57	173	7.88	1.73	47.26	25.34	T	15.10	.0	.0	.0	--	--	--	--	--	--	---	---	122	70	61	155	114	96	---	--	---	--	---	---	--
Miami	7	77.9	58.6	91.0	71.1	75.7	18	98	32	58	178	8.33	1.65	56.48	24.40	.01	9.95	.0	.0	.0	86	55	74	84	64	76	9.4	7.6	80	--	--	87	174	104	128	0	80	6	67	*	0
Miami Beach	9	75.5	64.4	87.6	77.4	76.6	19	98	35	43	123	7.07	1.82	42.97	18.02	.01	8.35	.0	.0	.0	--	--	--	--	--	--	---	---	---	--	--	---	---	---	126	0	---	--	11	0	0
Orlando	106	75.0	50.7	91.4	72.7	72.5	18	102	26	188	650	7.85	1.32	51.31	19.57	T	9.67	T	T	T	90	55	73	90	60	79	8.8	7.6	---	--	--	98	149	118	118	0	83	30	107	3	0
Pensacola (U)	13	61.1	46.9	86.9	75.0	68.0	21	103	13	383	1435	7.59	3.84	61.77	18.80	T	9.16	T	.2	2.1	86	64	79	85	64	74	8.3	6.8	91	56	65	---	---	---	111	*	65	--	39	9	0
Pensacola	110	----	----	----	----	----	--	---	--	----	----	----	----	-----	-----	----	-----	---	----	----	83	69	77	83	69	76	---	---	---	--	--	---	---	---	---	--	---	--	---	---	---
Tallahassee	64	65.2	42.0	91.0	71.0	67.7	21	103	15	385	1519	7.87	2.38	56.08	20.32	.02	7.07	T	.1	2.8	87	57	72	91	64	77	6.4	4.7	---	--	--	101	132	132	114	*	79	40	81	20	0
Tampa	19	70.8	52.1	89.5	73.8	72.3	14	98	24	201	674	8.11	1.04	50.04	20.59	T	12.11	T	T	T	88	57	74	88	62	78	8.4	7.2	---	70	60	99	148	118	115	0	94	28	84	2	0
West Palm Beach	15	75.4	58.6	89.9	74.0	75.0	22	101	31	85	248	9.12	2.20	61.80	24.86	.12	15.23	.0	.0	.0	86	59	75	84	64	78	9.7	7.4	---	--	--	72	158	135	137	0	80	8	89	*	0
GEORGIA							69	112	-17							.00	18.00																								
Albany (1953)	190	62.4	40.3	93.0	71.9	67.4	65	106	-2	446	1763	5.46	2.09	49.50	20.48	.00	7.60	T	T	1.0	88	57	70	85	55	70	7.0	4.9	60	--	--	116	118	131	111	*	66	25	100	18	0
Athens	798	51.6	31.8	92.4	69.1	62.7	17	105	5	629	2800	5.17	2.94	50.11	14.98	.09	5.54	.4	1.5	5.0	81	57	66	90	58	68	10.2	7.5	---	--	--	107	110	148	110	*	50	29	57	48	0
Atlanta (U)	1054	52.5	36.6	87.3	70.0	62.0	†	†	†	632	2811	5.49	2.50	47.96	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Atlanta	975	53.3	39.9	89.4	69.6	62.2	12	103	3	632	2826	5.67	2.60	49.34	15.72	.09	5.46	.7	1.6	8.3	82	63	68	87	58	76	11.3	7.7	70	47	61	110	110	145	117	*	51	26	48	39	0
Augusta	143	59.2	35.6	91.9	70.4	64.0	10	106	10	554	2407	5.21	2.44	43.31	8.48	T	3.96	.1	.4	1.3	85	55	70	88	54	68	6.9	5.8	46	--	--	111	105	149	104	*	55	23	88	53	0
Columbus	385	58.1	36.7	91.0	70.7	64.2	15	104	10	563	2396	5.92	2.04	49.17	12.53	.30	5.32	T	T	T	86	60	74	86	58	71	---	---	--	--	--	111	104	150	113	0	60	19	80	42	0
Macon	356	60.4	38.6	[illegible]	71.5	66.1	12	106	10	497	2049	5.34	2.27	46.47	11.77	.30	4.60	.3	.3	3.7	83	53	63	86	53	66	9.1	7.6	65	58	64	117	105	143	112	*	60	23	97	34	0
Rome	637	53.6	31.8	92.2	[illegible]	[illegible]	15	106	-1	700	3138	5.83	2.86	53.15	17.37	.36	7.53	.2	1.5	3.7	82	59	73	88	54	67	---	---	--	--	--	101	121	143	123	*	63	25	69	79	0
Savannah	48	62.2	40.9	90.8	71.5	66.4	10	104	14	439	1808	7.09	1.51	45.86	15.70	.18	6.36	.1	.1	1.0	86	55	70	88	59	75	9.2	7.5	66	56	[illegible]	108	117	140	107	*	66	38	71	29	0
Thomasville (U)	283	61.2	41.2	90.0	71.1	67.9	38	106	13	376	1472	7.02	2.24	52.01	18.83	.01	9.00	T	.1	2.0	p85	p60	p70	p85	p60	p78	5.3	4.1	--	54	57	122	119	124	116	*	71	10	76	[illegible]	0
Valdosta (1953)	200	65.4	41.7	92.0	70.5	67.8	6	103	18	386	1525	8.03	2.14	51.62	15.94	.05	4.85	.0	T	T	--	--	--	--	--	--	---	---	--	--	--	113	114	138	115	0	73	39	101	18	0
HAWAII							56	100	18							.00																									
Hilo	31	78.4	62.4	82.6	67.0	73.0	14	93	55	----	----	15.99	6.75	140.35	50.82	.36	15.59	.0	.0	.0	85	81	68	88	82	67	7.3	7.0	--	45	44	28	117	220	287	0	6	0	*	0	0
Honolulu (U)	12	76.7	67.2	82.2	73.5	75.2	38	88	57	0	0	4.31	.63	23.99	18.70	.06	17.41	.0	.0	.0	--	--	--	--	--	--	---	---	--	--	--	--	---	---	148	0	--	--	0	0	0
Honolulu	7	78.6	65.8	84.6	73.0	75.9	--	---	--	----	----	4.65	.23	21.78	-----	----	-----	---	----	----	80	80	62	74	69	56	10.0	13.9	67	65	76	101	169	95	148	0	6	0	0	0	0
Lihue	115	77.4	62.7	82.4	72.4	74.0	10	90	51	----	----	6.23	1.65	42.63	18.45	.30	11.20	.0	.0	.0	84	84	68	81	76	65	10.3	12.6	73	50	59	54	169	142	204	0	8	0	*	0	0
IDAHO							68	118	-60							.00	7.17																								
Boise	2842	34.6	19.9	90.5	59.1	50.8	21	111	-17	1169	5890	1.39	.18	11.52	4.00	.00	2.24	7.6	21.1	13.0	82	75	74	53	34	22	9.0	8.7	61	40	89	125	94	146	90	8	16	19	40	128	2
Idaho Falls 46W (R)	4933	27.6	3.8	88.1	50.3	42.3	11	101	-32	1528	8556	1.02	.36	7.70	4.12	.00	1.73	7.4	25.7	8.5	--	--	--	--	--	--	6.2	8.1	51	--	--	--	---	---	67	10	14	--	27	212	33
Idaho Falls 42NW (R)	4790	25.3	-0.7	87.9	48.3	41.1	10	103	-43	1634	8925	1.08	.31	7.56	3.00	.06	1.33	---	----	----	--	--	--	--	--	--	4.9	7.8	50	--	--	--	---	---	65	--	--	--	32	219	41
Lewiston	1413	37.2	24.1	90.1	60.2	52.1	14	109	-22	1060	5483	1.75	.38	13.16	4.80	T	1.73	7.5	26.1	11.9	80	74	72	62	36	23	---	---	--	--	--	96	80	189	103	6	16	20	36	102	7
Pocatello	4444	31.0	13.0	89.4	55.9	47.2	22	103	-31	1333	6976	1.32	.72	12.47	3.80	.00	1.65	10.5	36.2	10.1	82	76	75	56	30	21	9.8	9.6	72	37	82	115	100	150	91	13	27	10	32	161	9
Salmon	3949	28.2	4.1	89.6	46.8	44.0	48	--	--	1513	7922	1.28	.42	8.64	3.88	.00	1.50	---	----	----	--	--	--	--	--	--	---	---	--	--	--	--	---	---	---	--	--	--	---	---	---
ILLINOIS							71	117	-35							.00	10.25																								
Cairo (U)	314	44.9	29.8	90.7	71.7	59.8	18	104	-5	856	3756	4.72	2.60	43.76	14.95	.33	7.56	2.7	9.1	7.3	81	69	--	84	58	--	9.9	6.5	59	42	78	111	104	150	115	3	54	6	55	64	*
Chicago (Midway)	610	32.7	[illegible]	85.3	63.9	50.1	18	104	-15	1213	6310	4.15	1.47	32.78	12.06	.30	6.24	7.5	35.5	12.5	81	71	75	78	51	55	11.0	7.7	60	43	69	96	102	167	120	10	37	17	26	124	7
Joliet (1952)	584	32.5	15.0	86.9	60.5	49.1	11	101	-20	1277	6578	4.14	1.51	34.25	9.23	.25	5.32	5.7	25.0	8.0	--	--	--	--	--	--	---	---	--	--	--	83	124	157	110	9	40	24	26	143	12

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F) Normal (1921-1950) January Daily maximum	January Daily minimum	July Daily maximum	July Daily minimum	Annual	Extremes Length yrs	Record highest	Record lowest	Normal degree days (1921-1950) January	Seasonal	Precipitation (inches) (1921-1950) Wettest month	Driest month	Annual	Extremes Wettest month	Driest month	Maximum in 24 hours	Snow, sleet Mean total January	Seasonal	Extreme Maximum in 24 hours	Relative humidity (percent) January 7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	July 7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	Wind Speed (m.p.h.) Mean hourly January	July	Fastest mile	Sunshine (percent of possible) January	July	Annual mean number of days Sunrise to sunset Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max 90° and above	Min 32° and below	Zero and below
ILLINOIS (Cont'd.)																																									
Moline	589	31.9	14.4	87.2	63.7	50.2	28	106	-23	1296	6364	4.63	1.22	33.15	10.35	0.04	4.89	6.7	26.2	9.6	80	70	75	84	54	56	10.5	7.4	77	45	73	101	102	162	110	9	44	21	28	138	12
Peoria	652	33.3	16.7	87.0	64.4	51.0	21	103	-16	1240	6087	3.94	1.97	35.25	10.80	.25	5.06	5.0	23.0	9.0	82	72	76	84	55	57	11.5	8.2	75	43	70	103	102	160	111	9	49	20	26	128	8
Rockford	728	----	----	----	----	48.6	10	103	-20	----	----	4.62	1.41	34.77	11.81	.01	5.22	8.8	31.4	10.9	82	73	79	86	55	59	8.9	7.7	54	--	--	93	102	170	115	11	39	24	22	150	12
Springfield (U)	632	36.4	21.6	89.1	68.3	54.4	--	---	--	1116	5225	4.11	1.67	35.82	-----	----	----	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	---
Springfield	587	35.3	19.4	87.4	65.2	52.4	13	112	-15	1166	5693	4.19	1.68	36.71	8.87	.15	5.12	2.8	17.8	8.0	82	71	75	86	57	60	13.4	8.6	75	39	73	111	89	165	113	6	52	16	30	121	4
INDIANA							74	116	-35							.00	10.50																								
Evansville	383	43.4	26.0	89.1	67.3	56.9	20	105	-23	939	4360	4.29	2.82	41.46	13.50	.13	5.16	3.3	11.2	10.6	83	69	75	85	55	60	10.0	6.6	59	38	77	103	101	161	116	4	49	16	43	101	1
Fort Wayne	801	33.4	19.1	84.3	62.6	49.9	14	103	-17	1200	6287	3.56	1.83	34.27	9.72	.42	4.60	7.0	28.7	7.7	84	74	80	84	54	59	11.0	8.0	65	37	71	79	107	179	131	8	43	21	18	135	5
Indianapolis (U)	718	38.7	23.4	88.3	67.7	54.5	--	---	--	1051	5134	4.18	2.08	39.24	-----	----	----	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	---
Indianapolis	793	37.1	20.5	87.9	64.1	52.5	23	104	-19	1122	5611	4.21	2.16	39.77	12.69	.21	3.90	4.0	18.1	5.6	83	72	77	84	55	61	12.2	8.0	90	37	73	92	102	171	122	7	47	21	21	121	4
South Bend	768	31.9	17.2	84.6	62.1	49.1	21	101	-22	1252	6524	3.84	1.62	35.65	9.75	.02	3.18	13.8	56.9	15.0	83	75	80	85	54	59	11.9	8.4	63	--	--	76	105	184	137	19	43	21	18	139	7
Terre Haute (1953)	578	38.4	20.2	88.9	64.9	53.5	41	110	-20	1107	5366	4.43	2.14	40.91	11.94	.03	5.16	4.7	17.7	10.2	82	70	76	77	50	56	10.4	7.3	66	44	74	98	128	139	121	6	48	11	34	100	4
IOWA							88	118	-47							.00	12.99																								
Burlington	694	32.5	15.5	88.0	65.5	51.3	63	111	-27	1271	6101	5.64	1.46	36.66	15.10	.08	6.28	7.1	25.3	13.0	81	70	75	85	56	59	11.1	8.0	73	51	77	167	78	120	103	10	53	20	34	129	10
Charles City(U)(1952)	1013	25.7	7.8	84.8	62.3	46.5	61	108	-34	1494	7504	4.28	1.15	31.42	12.78	T	6.74	9.9	43.4	17.5	--	--	--	--	--	--	7.7	6.0	48	49	71	121	118	126	111	--	42	--	17	155	28
Davenport (U) (1956)	568	32.0	16.5	87.3	67.2	51.4	84	111	-27	1262	6091	4.79	1.31	34.27	12.68	.01	6.57	7.2	26.6	11.2	--	--	--	--	--	--	---	---	--	--	--	---	---	---	112	9	42	9	22	123	11
Des Moines (U)	807	31.4	14.2	87.6	66.6	50.9	80	110	-30	1308	6274	5.05	1.11	30.93	15.79	T	5.37	8.9	32.2	17.7	83	k69	75	77	k49	54	10.1	8.0	71	54	74	124	118	123	107	10	47	7	25	129	15
Des Moines	948	30.8	13.3	86.8	65.6	50.2	21	105	-21	1330	6446	4.99	1.13	30.79	14.19	.03	5.50	8.9	31.9	19.8	79	71	73	85	56	55	12.3	9.8	76	48	71	101	98	166	102	10	48	17	28	140	13
Dubuque (U) (1950)	641	27.9	11.3	84.7	60.4	48.3	76	110	-32	1407	6910	4.68	1.31	33.26	14.16	.02	5.48	9.2	34.9	14.9	81	70	75	78	52	60	7.0	5.8	47	48	73	114	115	136	114	11	39	12	16	131	17
Dubuque	1065	27.2	11.6	83.2	63.3	47.0	10	99	-26	1414	7271	5.09	1.15	32.89	8.14	T	4.38	9.5	42.1	15.5	82	72	78	85	58	63	---	---	--	--	--	92	100	173	113	14	44	28	11	154	16
Sioux City	1094	28.9	9.2	88.4	64.2	48.6	20	107	-24	1423	7012	4.41	.74	24.93	8.67	T	3.89	6.3	30.5	11.4	77	67	71	87	55	53	11.1	9.0	91	57	76	107	106	152	98	11	44	21	34	152	19
Waterloo	870	28.0	9.4	86.2	62.8	47.7	12	103	-27	1435	7144	4.76	1.05	32.10	8.45	T	3.15	7.8	28.2	12.2	80	74	72	88	57	60	11.1	8.5	--	--	--	---	---	---	81	8	36	25	17	158	19
KANSAS							74	121	-40							.00	12.59																								
Concordia (U)	1375	37.6	18.6	91.2	68.7	54.5	76	116	-25	1144	5323	4.23	.59	25.44	13.74	T	6.46	4.5	21.0	17.2	78	64	68	77	47	48	7.7	7.1	65	60	78	142	127	96	87	8	45	10	48	119	6
Dodge City	2594	42.0	18.6	92.9	66.9	55.0	18	107	-15	1076	5058	3.01	.49	20.61	8.69	T	4.17	4.8	20.4	9.3	79	60	63	78	46	42	14.5	13.7	78	67	77	144	107	114	78	7	54	26	63	126	4
Goodland	3645	39.3	12.3	90.9	60.2	49.9	40	111	-26	1215	6367	3.02	.31	18.23	8.09	.00	2.95	5.8	33.1	15.2	77	54	62	81	42	40	12.0	11.8	66	--	--	142	127	96	77	11	50	31	60	156	9
Topeka (U)	926	39.8	20.8	91.8	69.4	55.9	70	114	-25	1088	4919	4.61	1.00	33.28	14.10	T	8.08	---	----	----	--	--	--	--	--	--	---	---	--	--	--	142	122	101	97	--	--	--	48	106	4
Topeka	877	38.8	18.6	90.7	67.7	54.6	14	109	-21	1125	5209	4.66	1.01	33.13	12.02	T	4.48	5.7	22.1	9.3	78	64	68	87	57	56	10.7	9.2	81	49	64	116	98	151	97	6	58	13	53	127	5
Wichita (U) (1955)	1372	41.3	22.6	92.3	69.4	57.0	67	114	-22	1023	4571	4.99	.98	30.70	14.43	.00	7.99	3.2	13.6	12.3	78	63	66	77	48	49	12.5	11.6	100	61	80	158	112	95	87	4	52	11	54	96	2
Wichita	1321	41.3	22.6	92.3	69.4	57.0	7	113	-10	1023	4571	4.99	1.02	30.74	10.46	T	4.24	4.3	16.1	7.2	80	64	67	80	49	46	13.2	11.6	66	58	75	130	98	137	82	4	55	19	70	112	1
KENTUCKY							72	114	-33							.00	10.10																								
Bowling Green (1952)	534	45.6	27.0	88.9	65.6	56.9	65	113	-20	890	4279	5.66	2.88	50.10	20.70	.03	6.15	3.0	8.8	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	--	--	--	--	---	---	---
Lexington	979	42.7	25.1	87.4	65.7	55.4	16	103	-15	964	4677	4.50	2.44	43.84	16.65	.24	5.88	4.5	12.6	9.5	83	71	77	85	56	66	13.1	8.1	--	--	--	100	106	159	130	5	47	18	30	98	1
Louisville (U)	457	43.2	27.9	87.9	69.3	57.3	f	f	f	911	4279	4.67	2.48	41.60	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f
Louisville	474	43.6	26.2	89.1	66.6	56.5	13	105	-19	933	4439	4.67	2.45	41.59	11.38	.23	5.14	4.2	14.7	9.2	81	68	73	85	54	59	10.2	6.7	61	34	68	102	101	162	123	5	44	10	49	92	*
LOUISIANA							70	114	-16							.00	21.40																								
Baton Rouge	64	61.3	43.4	90.0	72.2	67.5	10	103	19	424	1595	5.87	2.98	59.29	13.23	.09	4.96	T	.2	1.0	85	61	66	92	59	71	10.0	6.3	--	--	--	99	120	146	103	*	70	35	97	18	0
Burrwood (1952)	5	65.2	49.0	89.0	76.1	70.7	45	99	10	303	1033	7.31	3.56	58.40	18.99	.00	10.80	T	T	T	--	--	--	--	--	--	---	---	--	--	--	---	---	---	--	--	--	--	---	---	---
Lake Charles	12	61.8	43.4	91.1	73.3	68.3	22	104	12	416	1543	6.93	3.44	57.99	17.94	T	16.01	.4	.7	5.0	89	67	75	93	62	71	10.4	6.5	69	--	--	95	121	149	106	*	70	38	86	12	0
New Orleans (U)	9	63.5	48.3	90.3	75.8	70.4	46	102	17	341	1175	7.09	3.66	63.70	25.11	T	14.01	T	.1	1.3	85	67	73	84	63	71	7.5	5.7	98	49	61	109	135	121	119	*	73	15	69	4	0
New Orleans (1950)	3	63.2	46.5	90.1	73.4	69.1	14	100	19	364	1317	5.90	3.18	59.65	16.87	.21	7.87	T	T	T	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	0	--	--	---	5	0
Shreveport (U)(1955)	174	56.4	39.2	93.4	73.8	66.4	82	110	-5	550	2117	4.83	2.22	45.10	25.45	T	12.44	.9	1.8	11.0	83	67	66	86	56	62	9.0	7.1	59	47	78	150	109	106	99	--	49	6	84	22	*
Shreveport	252	56.1	39.5	93.3	73.6	66.8	9	106	15	550	2058	4.83	2.22	45.23	11.19	.04	7.17	T	.2	1.5	82	63	64	90	56	57	10.8	8.0	--	51	76	128	92	145	94	*	57	18	99	30	0
MAINE							73	105	-48							.00	7.72																								
Caribou	624	18.1	-.8	74.5	53.5	37.2	21	96	-41	1745	10173	4.03	1.79	35.94	8.45	.12	6.23	21.9	105.0	18.2	73	69	73	82	58	71	12.5	10.0	--	--	--	59	103	203	161	29	19	26	3	191	41
Eastport (U) (1952)	33	29.8	14.1	69.2	51.9	42.3	80	93	-23	1333	8266	3.66	2.49	35.92	13.22	.13	5.48	16.9	71.6	18.5	74	72	71	85	77	83	13.5	7.5	83	45	56	89	114	162	149	23	13	60	*	137	10
Portland	61	30.7	10.6	78.7	56.9	44.5	20	100	-39	1373	7681	4.43	2.59	41.91	9.97	.26	7.49	19.7	70.0	21.0	81	65	74	80	58	76	9.5	7.7	76	54	68	115	98	152	127	19	19	53	5	161	15
MARYLAND							65	109	-40							T	14.75																								
Baltimore (U)	14	43.6	29.6	86.9	70.0	57.1	89	107	-7	880	4203	4.38	2.95	42.69	17.69	.05	7.82	6.1	22.7	24.5	72	58	66	71	52	65	10.3	8.8	66	48	65	121	123	121	123	6	32	15	24	72	*
Baltimore	146	42.8	25.6	86.6	66.0	54.7	10	102	-4	955	4787	4.38	2.96	42.69	18.35	.15	7.82	4.6	19.4	15.5	77	60	67	80	53	66	10.9	9.0	80	49	68	107	111	147	115	10	31	32	30	99	*
Frederick	294	41.4	24.0	87.9	65.4	54.7	11	102	-10	1001	4854	4.03	2.68	40.33	11.26	.15	5.56	4.0	16.2	10.0	--	64	--	--	57	--	---	---	--	--	--	---	---	---	123	6	--	10	28	127	*
MASSACHUSETTS							73	106	-34							.00	11.14																								
Blue Hill Obs.	629	34.0	18.6	79.7	61.4	47.3	75	101	-21	----	----	4.20	3.45	46.41	18.78	.06	9.93	15.5	59.4	27.2	77	63	70	80	57	75	17.4	13.0	121	44	57	---	---	---	137	16	--	--	4	131	4
Boston	15	36.5	21.6	80.0	64.3	50.7	9	100	-12	1113	5791	3.50	2.79	38.86	17.09	.35	8.40	12.6	39.7	19.4	70	60	64	72	54	65	14.4	10.4	65	46	66	98	107	160	133	10	20	23	13	93	*
Nantucket	43	39.3	24.8	73.8	60.3	48.8	14	95	2	1020	6102	4.05	2.83	41.82	8.88	.01	4.48	6.3	32.5	20.1	81	73	77	86	73	89	14.7	11.3	73	37	63	85	94	186	125	8	22	98	*	91	0
Pittsfield	1153	29.8	12.5	79.0	56.1	44.5	22	95	-25	1358	7694	4.95	2.59	44.32	10.32	.60	4.25	17.6	74.0	----	--	--	--	--	--	--	---	---	--	--	--	57	127	181	156	23	28	45	2	160	13
Worcester	986	31.3	16.6	79.3	61.0	47.0	5	93	-19	1271	6979	4.31	2.67	42.12	8.25	.83	4.79	17.3	79.3	16.6	74	61	68	74	59	69	15.0	10.7	--	--	--	88	110	167	134	21	19	83	2	148	6
MICHIGAN							74	112	-51							.00	9.91																								
Alpena (U) (1958)	587	28.1	14.2	76.8	57.9	43.5	45	104	-28	1358	8073	3.20	1.45	26.63	7.43	.16	4.40	16.0	64.4	16.7	80	70	76	77	61	68	11.7	9.2	61	29	70	82	119	164	144	19	29	20	3	155	10
Detroit (City AP)	619	33.1	19.3	83.5	62.6	49.3	27	105	-16	1203	6404	3.61	2.08	31.11	8.05	.38	3.72	8.2	32.1	9.8	81	70	76	75	51	55	11.4	8.2	77	31	71	81	106	178	133	11	33	11	14	126	2
Detroit (Willow Run)	722	32.1	18.5	84.3	62.6	49.2	14	100	-11	1231	6469	3.44	1.81	30.23	8.71	.30	4.78	8.1	32.8	8.0	81	71	76	78	48	55	11.7	8.8	60	--	--	80	101	184	123	11	34	29	18	134	3
East Lansing(U)(1958)	856	30.9	16.6	82.4	59.7	47.3	53	102	-25	1277	6982	3.75	1.81	31.08	9.21	.04	5.47	11.2	46.9	18.1	80	71	--	80	50	--	9.7	6.3	50	34	72	94	111	160	143	14	38	12	10	145	7

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation of ground (feet)	Temperature (°F) Normal (1921-1950) January Daily maximum	January Daily minimum	July Daily maximum	July Daily minimum	Annual	Extreme Length of record (yrs.)	Record highest	Record lowest	Normal degree days (1921-1950) January	Season	Precipitation (inches) (1921-1950) Wettest month	Driest month	Annual	Extremes Wettest month	Driest month	Maximum in 24 hours	Snow, sleet Mean total January	Seasonal	Extreme Maximum in 24 hours	Relative humidity (percent) January a.m. EST	a.m. EST	p.m. EST	July a.m. EST	p.m. EST	7:30 p.m. EST	Wind speed (m.p.h.) Mean hourly January	July	Fastest mile	Sunshine (percent of possible) January	July	Annual mean number of days Sunrise to sunset Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max 90° and above	Min 32° and below	Min 0° and below
MICHIGAN (Cont'd.)																																									
Escanaba (U)	591	25.0	10.0	75.3	58.4	41.9	51	100	-31	1173	8657	3.22	1.41	27.12	9.93	0.07	5.05	13.7	55.9	14.5	78	70	75	80	65	69	10.2	9.0	68	41	66	102	107	156	129	18	33	20	*	164	20
Flint	766	30.5	15.8	82.7	59.2	46.8	19	101	-22	1296	7128	3.18	1.58	30.20	8.68	.07	6.04	10.1	38.7	13.4	85	75	81	83	52	59	12.1	8.3	81	--	--	65	109	191	132	12	32	19	12	149	9
Grand Rapids (U)	638	31.8	19.7	84.0	63.2	49.3	†	†	†	1215	6471	3.47	1.73	31.35	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Grand Rapids	681	30.7	16.3	83.6	59.4	47.1	21	102	-22	1287	7075	3.15	1.73	31.56	8.12	.03	4.26	18.3	72.8	10.0	86	77	81	83	51	55	10.9	8.0	65	28	70	72	95	198	139	25	38	20	13	149	6
Marquette (U)	677	25.2	12.1	75.1	57.1	42.2	23	102	-17	1435	8529	3.46	1.78	31.30	10.20	.21	4.65	19.3	103.8	16.1	75	69	73	76	63	65	8.9	7.2	59	30	66	62	105	198	155	30	29	16	6	[illegible]	9
Muskegon	627	31.4	18.3	80.5	59.2	46.8	21	97	-14	1243	7089	3.34	1.70	29.07	7.54	.19	3.51	21.7	73.5	12.5	82	76	78	83	57	60	---	---	--	--	--	80	92	193	139	25	36	23	6	144	2
Sault Ste. Marie	721	21.9	5.7	75.1	52.4	39.3	19	98	-25	1587	9475	3.49	1.57	30.24	6.93	.25	2.67	21.0	98.9	14.3	84	78	83	88	62	68	10.2	8.4	58	32	63	68	92	205	162	33	30	46	1	179	26
MINNESOTA							74	111	-59							.00	10.75																								
Duluth (U)	1162	18.7	1.9	75.8	55.8	39.2	84	106	-41	1696	9574	3.72	1.00	26.67	11.52	.07	5.35	11.1	56.0	23.0	78	74	74	87	61	66	12.3	10.5	75	46	67	110	119	136	126	16	31	37	2	173	41
Duluth	1409	17.2	-.7	76.8	56.0	38.2	19	97	-35	1758	9937	4.33	1.20	29.76	8.48	.13	4.05	16.4	76.2	25.4	78	73	73	88	61	64	12.5	10.8	75	51	69	80	103	182	132	22	34	52	2	191	51
International Falls	1179	13.6	-7.7	78.6	53.0	36.3	21	98	-41	1922	10600	3.73	.85	24.20	11.26	.10	4.82	10.4	59.5	13.9	74	69	71	88	57	58	9.0	7.9	52	--	--	83	105	177	134	18	30	14	4	198	66
Minneapolis-St. Paul	830	23.1	6.1	84.9	63.3	45.6	22	104	-31	1562	7853	4.26	.80	24.75	7.80	T	4.12	6.3	40.2	16.2	81	71	74	82	54	54	10.5	9.5	92	50	70	105	100	160	112	12	35	12	18	156	28
Rochester (1951)	1297	23.5	5.1	84.2	59.4	44.5	19	108	-40	1572	8095	4.33	.75	28.18	9.66	T	5.26	8.5	42.4	10.0	75	67	72	83	55	57	---	---	--	--	--	78	135	152	105	13	40	16	14	166	34
St. Cloud	1034	20.7	.2	83.2	58.0	41.9	21	103	-40	1690	8893	3.85	.69	24.19	9.34	.01	4.62	6.7	41.0	12.2	77	71	73	87	55	57	8.2	7.0	--	--	--	95	108	162	108	13	37	19	11	178	43
St. Paul (1952)	703	23.3	6.5	84.9	63.7	45.8	80	108	-41	1553	7804	4.23	.87	26.50	11.67	T	5.67	8.9	41.2	17.0	75	69	69	79	51	53	9.5	8.1	92	--	--	104	128	133	114	13	34	9	12	154	32
MISSISSIPPI							72	115	-16							.00	12.35																								
Jackson	305	58.6	37.9	93.6	70.5	65.4	5	100	10	535	2202	6.23	2.10	51.05	10.23	.04	5.29	T	2.3	9.1	83	60	67	91	58	64	8.3	4.8	54	43	66	103	108	154	116	1	71	14	82	45	0
Meridian	294	58.5	36.5	92.0	69.8	64.5	15	104	8	561	2333	6.58	2.38	55.28	15.29	T	6.95	.4	.7	4.7	88	63	71	93	58	70	7.7	5.4	--	--	--	126	110	129	103	*	56	18	92	48	0
Vicksburg (U)	234	57.6	40.8	90.0	72.9	66.1	23	101	6	507	2000	6.03	1.77	49.82	16.58	.03	9.97	1.1	1.7	10.0	83	62	70	93	62	71	9.4	6.7	49	44	66	107	118	140	104	*	63	11	68	20	0
MISSOURI							73	118	-40							.00	12.25																								
Columbia	778	38.8	20.7	88.8	66.8	54.6	21	113	-18	1091	5113	4.90	1.63	39.39	13.30	.09	4.05	4.4	19.6	10.3	80	66	69	85	55	56	11.0	7.9	63	47	75	117	100	148	108	5	52	15	43	110	3
Kansas City	741	39.0	21.0	91.2	70.5	56.1	27	113	-13	1085	4888	5.02	1.21	35.36	11.94	.04	5.96	5.3	19.6	12.8	78	65	67	77	49	48	10.1	9.1	72	50	76	119	106	140	100	5	50	13	55	101	2
St. Joseph	809	36.9	17.3	91.4	68.8	54.5	12	107	-13	1175	5336	6.16	1.05	35.32	13.73	.05	4.76	6.3	21.9	11.3	79	66	70	88	59	59	11.8	8.4	64	46	62	121	100	144	100	5	60	21	44	127	6
St. Louis (U) (1958)	465	41.0	25.6	89.6	71.6	57.3	23	112	-12	983	4469	4.10	1.88	37.86	20.45	.03	8.78	3.8	14.6	12.4	n77	n65	n68	n73	n50	n55	12.6	9.5	82	45	72	128	106	131	110	6	51	8	46	83	2
St. Louis	560	40.8	23.6	90.0	69.3	56.3	3	99	-5	1017	4699	4.37	1.73	36.80	7.97	.32	3.29	3.9	16.9	11.2	82	70	71	85	59	57	10.1	7.1	45	38	70	104	104	157	104	8	41	8	38	102	2
Springfield	1265	41.7	23.7	[illegible]	67.2	55.7	15	113	-11	1001	4693	5.56	1.83	41.58	18.75	.13	6.85	3.0	13.0	12.5	83	69	72	88	59	61	13.3	10.1	66	45	71	113	100	152	108	5	62	19	41	103	1
MONTANA							91	117	-70							.00	10.10																								
Billings	3567	32.3	13.4	87.9	58.6	47.2	26	106	-38	1305	7106	2.61	.46	13.12	7.64	T	2.83	7.4	53.7	23.7	62	60	66	40	32	31	12.6	9.8	73	49	78	92	121	152	92	19	30	18	29	149	16
Butte	5530	28.0	.4	79.8	45.0	38.3	29	100	-52	1575	9760	2.28	.55	12.69	5.40	T	2.02	7.1	51.0	13.0	--	--	--	--	--	--	6.9	8.0	--	--	--	79	107	179	105	19	41	6	4	228	43
Glasgow	2277	19.6	1.1	86.7	57.6	42.0	17	108	-50	1690	8869	3.18	.36	13.28	6.95	T	2.83	7.2	34.6	8.4	77	72	75	72	38	32	--	---	--	--	--	88	104	173	90	12	28	12	28	184	47
Great Falls	3664	31.7	13.6	83.8	55.3	45.1	23	105	-35	1311	7555	2.96	.55	14.06	8.13	T	3.20	8.3	54.7	11.0	67	62	62	63	36	30	17.0	11.0	82	54	80	87	110	168	98	19	28	13	15	146	22
Havre (U)	2488	26.3	6.1	85.9	56.6	43.6	57	107	-57	1513	8213	2.98	.40	12.32	7.09	T	2.94	7.3	37.4	22.9	82	71	--	74	38	--	8.8	7.2	70	49	78	121	124	120	90	13	25	5	21	172	38
Helena (U)	4090	27.3	9.9	80.5	53.2	43.2	--	---	-	1438	8126	2.45	.49	12.55	----	----	----	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	---
Helena	3893	27.7	7.5	83.8	52.2	43.0	20	102	-42	1469	8250	2.15	.43	11.32	4.74	.02	1.99	8.3	48.9	21.5	73	69	66	72	41	32	6.6	8.0	73	51	79	84	109	172	97	14	39	9	11	182	26
Kalispell	2965	28.0	12.6	82.1	49.9	43.2	11	104	-38	1386	8055	2.43	.95	16.38	4.44	T	1.99	19.6	68.3	15.1	--	77	--	--	41	--	---	---	--	--	--	74	86	205	132	23	25	--	9	182	16
Miles City	2629	26.6	5.5	89.9	60.0	45.4	23	110	-37	1516	7850	2.84	.38	12.83	9.78	T	2.67	5.7	29.2	10.5	--	--	--	--	--	--	8.9	9.9	--	--	--	98	110	157	88	12	29	9	38	174	32
Missoula	3200	28.6	10.1	86.3	50.1	44.1	16	105	-33	1414	7873	1.87	.78	12.79	4.19	.02	1.82	10.9	44.3	11.2	84	78	75	76	39	28	4.8	6.5	72	31	79	74	83	208	124	15	26	25	19	181	12
NEBRASKA							85	118	-47							.00	13.15																								
Grand Island	1841	34.0	11.9	92.9	64.9	51.0	13	109	-26	1302	6311	3.87	.55	22.72	9.60	.00	5.41	6.5	28.6	8.6	79	64	71	83	51	48	11.5	11.4	--	--	--	123	106	136	85	10	47	15	45	150	12
Lincoln (U) (1954)	1184	34.3	15.7	90.5	67.8	52.7	68	115	-29	1240	5865	4.10	.82	25.73	14.21	.00	8.38	5.7	26.3	12.4	--	--	--	--	--	--	10.4	9.2	66	57	76	131	112	122	95	--	47	5	40	141	11
Lincoln (U)	1150	34.3	15.7	90.5	67.8	52.7	5	105	-10	1240	5865	4.10	.82	25.77	11.40	.05	4.86	9.4	35.1	10.4	--	--	--	--	--	--	10.1	9.0	64	57	75	123	102	140	97	10	47	4	43	130	6
Norfolk	1544	29.4	9.2	88.7	65.7	48.3	15	113	-26	1417	7065	4.78	.78	25.72	9.11	T	3.46	5.8	28.9	8.3	79	66	71	84	54	51	---	---	--	--	--	117	106	142	88	9	49	13	35	157	21
North Platte	2779	36.8	11.2	89.1	62.2	49.5	9	112	-22	1271	6546	2.92	.36	17.56	7.21	T	3.61	5.2	33.6	9.7	82	65	70	84	48	44	9.1	10.1	72	57	74	123	111	131	81	11	46	17	43	178	14
Omaha	978	32.4	13.5	89.3	67.6	51.6	25	114	-21	1302	6160	4.51	.81	25.94	10.81	T	3.62	8.5	31.8	13.7	81	68	73	81	52	51	11.5	9.4	109	53	76	117	108	141	95	9	49	15	40	136	12
Scottsbluff	3950	36.7	10.3	90.1	59.0	48.2	18	107	-27	1287	6841	2.78	.33	15.02	8.33	T	3.74	6.4	39.7	12.1	73	55	59	78	42	38	9.4	9.6	80	--	--	124	112	129	83	14	45	11	40	180	14
Valentine	2587	33.3	6.7	88.6	60.5	47.2	5	106	-29	1395	7266	3.16	.46	18.26	5.39	T	3.19	4.7	25.2	7.7	81	70	67	84	45	41	9.6	10.1	65	66	77	119	105	141	81	9	44	3	40	182	26
NEVADA							72	122	-50							.00	4.37																								
Elko	5075	34.5	9.2	91.3	49.1	45.7	30	104	-43	1336	7335	1.07	.29	9.16	3.35	T	1.62	10.6	36.1	16.7	80	73	67	56	24	19	5.3	6.3	--	--	--	135	101	129	75	13	21	5	44	214	18
Ely	6257	37.4	8.6	88.6	48.1	45.2	22	99	-27	1302	7443	1.29	.50	10.56	2.68	.00	1.42	8.9	43.8	13.1	75	61	58	49	21	21	11.3	10.9	74	62	79	137	108	120	69	14	31	2	15	217	20
Las Vegas	2162	55.4	33.0	105.4	75.6	66.8	12	116	12	653	2425	.60	.16	4.37	2.59	.00	2.59	1.6	1.7	5.0	60	41	34	31	18	14	6.5	9.9	--	75	85	220	80	65	23	1	14	1	138	46	0
Reno	4404	45.7	16.6	91.8	47.3	49.5	19	104	-16	1048	6036	1.08	.22	6.99	5.25	.00	2.37	7.0	23.9	16.9	82	67	54	72	26	19	6.3	6.6	72	64	91	171	91	103	[illegible]	8	12	9	47	188	3
Tonopah (1952)	6101	37.4	22.7	87.1	62.0	51.0	--	---	--	1082	5813	.55	.19	4.81	3.26	.00	1.97	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	---
Winnemucca	4299	37.4	18.2	92.0	56.4	49.1	11	105	-19	1153	6369	1.04	.18	8.78	2.86	T	1.79	6.6	22.5	9.9	78	67	61	44	21	15	8.3	8.2	63	42	83	142	89	134	65	8	14	2	53	194	7
NEW HAMPSHIRE							84	106#	-46							.00	8.00																								
Concord	339	31.6	8.6	82.6	55.3	44.8	19	100	-37	1392	7612	3.62	2.39	37.32	10.10	.41	4.47	18.7	61.1	19.0	78	60	71	80	50	68	7.4	5.6	72	47	62	94	112	159	127	20	22	55	14	169	17
Mt. Washington Obs.	6262	14.1	-3.3	55.1	43.4	27.0	76	71	-47	1790	13694	6.58	4.92	70.37	18.23	.75	7.03	29.4	194.6	32.0	82	83	82	91	87	90	46.9	25.4	231	33	31	52	77	236	206	68	16	303	0	242	62
NEW JERSEY							76	110	-34							.00	14.81																								
Atlantic City (U) (1958)	10	42.4	29.1	79.1	67.9	54.1	85	104	-9	905	4741	4.72	2.98	41.77	14.87	.01	9.21	4.2	14.6	18.0	79	68	74	81	72	82	16.2	13.3	91	51	67	118	122	125	122	5	23	21	3	75	*
Atlantic City (NAF EXP)	58	43.0	26.1	83.1	65.5	53.8	2	98	6	942	4884	4.58	2.98	40.12	13.09	.77	6.16	1.7	16.3	9.5	79	59	67	86	59	73	13.9	10.3	--	--	--	96	99	170	111	7	27	38	14	107	0
Newark	11	39.0	24.0	81.9	65.6	52.9	19	105	-7	1039	5252	4.20	3.10	43.07	11.84	.27	4.17	6.3	28.5	26.0	72	56	65	74	51	64	11.2	8.7	--	--	--	96	111	158	126	7	25	24	25	95	*
Trenton (U)	56	39.8	25.4	81.6	66.0	53.5	28	106	-14	1004	5068	4.59	2.65	40.15	14.10	.06	4.79	4.9	21.9	16.6	--	--	--	--	--	--	9.8	7.8	64	49	68	100	115	150	121	7	32	--	18	90	*

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

	Temperature (°F)						Extremes			Normal degree days		Precipitation (inches)									Relative humidity (percent)						Wind speed (m.p.h.)					Average number of days							Temperature		
										January											EST					EST													Max.	Min.	
NEW MEXICO							69	116	-50							0.00	11.28																								
Albuquerque	5310	45.6	24.8	91.6	66.4	56.6	21	104	-5	970	4389	1.13	0.28	8.70	3.25	.00	1.92	2.0	10.6	14.2	67	51	46	59	33	28	8.1	9.2	30	69	76	173	111	78	58	4	45	5	66	107	*
Clayton	4969	46.7	19.0	88.1	59.8	53.1	16	102	-21	995	5138	2.59	.27	15.44	7.77	.00	1.67	4.1	20.3	10.9	64	45	52	77	43	43	---	---	--	--	--	170	97	98	67	7	54	12	11	143	3
Raton	6279	42.8	9.3	84.1	52.7	48.2	16	98	-24	1203	6417	2.50	.35	15.44	7.61	.00	3.97	5.5	25.5	8.0	--	46	--	--	38	--	---	---	--	--	--	132	137	96	78	9	77	8	18	184	8
Roswell	3612	53.8	25.3	92.1	65.8	59.8	13	110	-15	787	3424	2.00	.39	12.09	5.64	.00	3.37	3.3	9.6	15.3	67	44	38	72	39	32	8.7	9.6	75	--	--	185	98	82	49	4	43	8	108	108	1
NEW YORK							71	108	-32							.00	10.45																								
Albany (U)	19	32.9	17.1	82.6	65.6	49.4	--	---	--	1234	6319	4.08	2.18	35.81	----	----	---	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	---
Albany	277	30.9	14.0	82.5	60.2	47.2	14	100	-26	1318	6962	3.37	2.10	31.89	8.96	.64	4.08	15.8	60.4	17.9	79	66	74	77	51	63	9.9	7.3	71	43	65	76	112	177	133	16	28	22	14	146	10
Bear Mountain (1952)	1300	32.8	18.9	79.5	62.6	48.3	13	99	-23	1212	6511	4.71	2.90	41.29	16.87	.25	5.50	11.3	48.9	23.0	--	--	--	--	--	--	---	---	--	--	--	73	122	170	126	13	27	98	4	130	3
Binghamton (U)	858	34.0	17.3	82.8	60.0	48.4	70	103	-28	1218	6556	3.69	2.32	36.34	9.59	.16	1.55	12.5	51.4	21.0	--	--	--	--	--	--	---	---	--	--	--	---	---	---	152	15	--	--	10	133	7
Binghamton	1590	29.7	13.6	79.1	59.0	45.2	9	---	--	1342	7537	3.87	2.50	37.66	----	----	----	---	----	----	83	75	78	83	55	64	12.7	8.8	72	33	66	49	105	211	---	--	32	47	---	---	---
Buffalo	693	32.4	18.5	81.1	60.0	47.5	17	99	-12	1225	6838	3.09	2.43	32.38	9.13	.11	3.11	26.7	109.2	19.9	79	72	78	79	53	63	15.1	11.2	91	33	71	62	111	192	167	30	27	2	8	131	2
New York (U)	10	39.9	25.8	82.3	66.9	53.4	90	102	-14	995	5050	4.34	3.04	42.03	14.51	.11	9.40	7.3	30.1	25.8	72	k62	66	76	k58	67	16.4	14.5	113	51	65	104	131	130	121	8	30	20	7	91	*
New York Central Park	132	39.2	26.1	84.7	67.4	54.0	92	106	-15	1001	4965	4.40	3.03	43.36	16.85	.02	11.17	7.6	30.0	26.4	n68	n61	n61	n76	n57	n64	11.1	9.7	--	84	66	101	129	135	121	8	--	--	15	81	*
New York (LaGuardia)	19	39.1	26.8	84.0	67.8	53.9	20	103	-7	992	4989	4.27	2.91	40.38	16.05	.03	7.11	6.5	30.8	22.8	69	59	63	74	54	65	---	---	--	--	--	---	---	---	122	7	--	--	18	78	*
Oswego (U) (1952)	292	31.7	17.6	77.8	62.3	47.0	82	100	-23	1249	6975	3.33	2.48	33.07	10.50	.18	3.76	23.8	87.9	19.1	78	68	77	76	63	70	12.1	7.9	48	19	69	79	102	184	163	28	26	9	2	127	6
Rochester	543	32.7	16.7	82.7	59.7	47.5	20	100	-16	1249	6863	3.09	2.36	31.83	9.70	.28	3.13	19.1	82.3	17.8	82	73	79	80	51	60	11.2	7.7	73	34	72	64	116	185	156	26	28	14	11	135	6
Schenectady (1952)	217	28.8	14.2	82.5	62.8	47.2	8	102	-28	1349	7050	3.86	2.22	35.25	8.69	.64	7.46	16.7	62.7	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	---
Syracuse	424	33.9	17.0	83.5	61.4	48.8	11	98	-24	1225	6520	3.68	2.10	36.51	8.41	.93	4.27	25.7	111.8	18.3	78	71	77	77	52	60	10.2	8.5	63	31	59	68	101	196	172	35	26	10	10	133	7
NORTH CAROLINA							74	109	-23							.00	22.22																								
Asheville (U)	2203	48.8	30.0	84.1	63.4	56.3	30	99	-2	794	4072	4.50	2.11	37.33	13.75	.22	6.78	2.3	11.7	15.8	82	59	67	89	57	71	9.5	5.6	52	47	60	104	122	139	130	4	52	46	14	82	*
Cape Hatteras (R)	7	54.3	41.6	83.4	73.5	63.1	3	94	14	527	2392	6.48	3.08	54.92	8.74	.45	4.46	1.3	4.1	7.0	79	66	76	87	71	84	12.2	9.8	--	--	--	108	104	153	117	1	42	16	4	32	0
Charlotte	725	52.2	32.3	88.8	68.3	60.5	21	104	-3	704	3205	4.67	2.65	43.23	10.89	T	4.84	1.4	4.0	8.0	82	57	67	86	55	69	8.6	6.8	57	55	70	110	107	148	112	1	46	23	56	65	*
Greensboro	891	49.0	29.0	87.4	66.9	58.1	32	102	-7	806	3810	4.94	2.60	42.61	13.26	.13	7.49	2.6	7.6	14.3	82	58	71	85	57	72	8.4	6.7	63	50	65	112	112	141	118	1	49	32	37	85	*
Raleigh (U)	400	51.3	34.0	88.9	69.6	61.1	f	f	f	691	3075	5.64	2.68	45.83	f	f	f	f	f	f	--	--	--	--	--	--	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f
Raleigh	433	50.8	32.0	89.0	68.0	59.9	16	105	7	732	3369	5.45	2.82	45.19	12.94	.44	5.20	2.4	6.5	9.1	82	57	69	87	56	72	8.3	6.6	--	58	68	118	107	140	118	1	47	33	48	72	0
Wilmington	30	58.7	36.9	89.1	80.0	63.8	9	104	11	533	2323	8.16	2.59	49.96	15.51	.17	8.24	.1	1.5	5.3	83	57	74	87	62	78	10.5	9.9	88	56	64	125	114	126	112	*	44	18	46	42	0
Winston-Salem	967	48.6	30.0	87.0	67.9	58.5	6	100	1	797	3721	4.57	2.79	43.27	10.86	.60	3.48	2.7	8.3	10.9	73	52	61	84	57	67	9.4	7.5	--	--	--	118	108	139	117	3	42	32	40	78	0
NORTH DAKOTA							69	121	-60							.00	7.70																								
Bismarck	1650	20.1	-1.8	85.5	58.6	41.7	21	109	-44	1730	9033	3.33	.36	15.42	8.29	T	3.25	7.0	37.7	13.5	77	71	75	84	50	47	10.2	10.0	72	54	75	96	112	157	96	11	35	11	23	186	49
Devils Lake (U)	1471	14.2	-4.7	81.7	56.9	38.7	56	112	-46	1866	9940	3.18	.40	17.63	8.55	T	4.82	6.2	35.5	13.4	76	72	75	86	53	52	9.8	8.4	57	53	71	113	110	142	101	11	30	10	10	189	61
Fargo	900	16.9	-2.8	84.2	58.3	40.9	19	105	-36	1795	9274	3.04	.60	18.76	8.52	.02	4.72	5.9	32.4	11.2	74	70	73	86	55	54	13.7	11.6	115	48	69	91	113	161	102	10	33	12	14	182	54
Williston (U)	1877	19.8	.2	83.5	58.2	41.3	44	110	-50	1705	9068	3.59	.48	14.68	7.88	T	3.06	5.6	33.1	10.6	74	67	69	77	45	41	6.8	7.0	60	51	78	122	115	128	91	12	27	7	18	178	43
OHIO							87	113	-39							.00	8.70																								
Akron-Canton	1210	34.8	20.0	83.1	61.6	49.7	12	100	-11	1166	6203	4.20	2.20	37.33	11.43	.20	4.18	7.5	43.3	8.5	84	75	80	83	56	65	11.9	7.7	--	--	--	75	99	191	150	14	42	30	10	136	3
Cincinnati (U) (1950)	553	42.3	26.9	88.0	68.1	50.3	80	109	-17	942	4532	4.07	2.19	39.34	13.68	.13	5.22	5.4	18.1	11.0	--	--	--	--	--	--	8.9	5.5	49	40	72	f	f	f	130	7	46	10	26	89	1
Cincinnati	869	39.7	23.8	85.9	64.3	53.6	17	---	--	1021	5195	4.04	2.17	39.16	----	----	----	---	----	----	82	70	74	84	52	60	---	---	--	--	--	108	115	142	---	--	--	--	---	---	---
Cincinnati Obs.	761	40.9	25.2	87.2	65.9	54.9	45	109	-17	989	4870	4.07	2.19	39.42	13.68	.17	4.77	5.1	18.5	11.0	81	70	73	84	54	61	8.5	5.3	49	41	72	86	95	184	132	8	50	21	29	97	2
Cleveland (U)	653	36.0	23.0	80.9	66.5	51.5	--	---	--	1101	5717	3.35	2.19	33.50	----	----	----	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	---
Cleveland	787	36.0	20.9	84.7	62.6	50.6	20	103	-9	1132	6006	3.13	2.28	32.24	9.50	.61	3.73	10.0	51.5	15.0	82	73	79	80	53	59	12.6	8.9	74	26	68	71	106	188	154	18	37	14	18	119	3
Columbus (U)	724	38.2	23.9	85.8	65.8	53.4	--	---	--	1051	5277	3.66	2.00	34.36	----	----	----	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	---
Columbus	814	37.8	21.6	86.2	62.6	52.0	21	104	-15	1094	5615	4.33	2.18	37.96	9.75	.33	4.81	9.8	29.3	8.7	82	71	76	83	52	60	10.1	5.9	63	35	70	78	106	181	135	8	41	20	26	117	4
Dayton	1002	37.3	22.1	85.3	64.7	52.2	17	102	-16	1094	5597	3.90	2.18	35.22	10.89	.10	4.30	5.9	24.5	10.0	83	72	77	82	53	58	12.2	8.1	78	36	70	79	106	180	131	8	42	22	18	115	3
Mansfield	1296	----	----	----	----	----	1	90	-9	----	----	----	----	-----	4.40	1.10	1.28	1.5	48.2	7.5	86	82	--	82	55	--	---	---	--	--	--	68	102	196	150	17	31	25	1	130	4
Portsmouth (R)(1954)	670	42.7	23.4	87.7	61.6	54.1	34	107	-25	989	4965	4.26	2.28	38.56	9.92	.51	3.43	8.8	32.9	10.1	n71	n59	n59	n88	n47	n54	7.7	3.4	60	--	--	39	75	142	106	9	63	64	36	113	0
Sandusky (U)	603	35.7	21.8	83.7	65.5	51.3	33	105	-12	1122	5859	3.73	1.99	33.23	12.51	.40	5.95	6.3	27.3	12.3	--	--	--	--	--	--	10.1	6.9	75	34	75	92	115	158	136	10	35	9	19	110	3
Toledo	676	34.7	18.0	85.3	60.9	49.4	5	97	-11	1197	6394	3.55	1.92	31.90	6.71	.37	2.50	9.6	33.0	9.8	84	73	79	87	54	60	10.3	7.9	72	40	72	77	104	184	131	10	42	18	13	142	5
Youngstown	1178	34.9	20.0	83.3	61.2	49.8	17	100	-12	1163	6172	4.16	2.77	41.43	9.87	.27	4.31	11.4	53.5	20.7	84	74	80	83	54	65	12.0	7.1	--	--	--	74	102	189	164	17	36	30	11	135	4
OKLAHOMA							69	120	-27							.00	19.75																								
Oklahoma City(U)(1953)	1254	47.2	28.3	93.1	71.8	61.0	63	113	-17	843	3519	4.42	1.28	32.59	14.12	T	7.87	f2.7	f7.8	f11.3	f79	f62	f65	f80	f49	f51	---	---	66	f57	f78	f161	f107	f97	82	f2	f45	f8	64	70	*
Oklahoma City	1280	47.0	27.2	93.3	70.9	60.4	6	107	-4	865	3644	4.25	1.29	30.27	10.78	T	4.82	3.5	9.6	8.4	85	68	70	82	53	48	15.0	12.1	87	53	77	151	95	119	82	3	51	7	68	88	*
Tulsa	672	46.9	27.9	93.1	71.1	60.6	22	112	-8	856	3584	5.15	1.63	37.74	18.00	T	7.30	4.1	9.8	9.0	80	62	65	84	55	53	11.6	8.8	75	49	71	124	105	136	91	3	55	7	71	76	1
OREGON							71	119	-54							.00	10.17																								
Astoria	8	44.0	36.1	66.7	54.8	51.4	7	93	15	772	4995	13.21	1.07	76.30	18.94	.01	3.55	2.0	4.3	5.9	88	85	80	91	75	70	8.1	8.2	--	--	--	50	72	243	200	2	9	41	1	37	0
Baker (U) (1952)	3446	32.3	15.9	84.2	51.0	46.1	62	104	-25	1268	7087	1.31	.33	10.02	4.00	T	1.83	11.3	40.4	16.7	†83	†81	†78	†69	†68	†36	5.9	5.8	53	41	83	122	107	136	103	45	16	3	15	156	6
Burns (U)	4151	35.5	12.2	87.3	52.2	46.8	10	100	-25	1274	6918	1.47	.25	10.29	3.97	.00	1.57	17.9	52.2	10.9	83	76	70	53	33	20	---	---	--	--	--	130	86	149	88	18	15	11	22	182	5
Eugene	361	44.8	31.6	82.4	50.7	52.4	18	105	-4	831	4779	6.00	.26	37.67	19.49	T	4.82	4.8	7.2	7.2	--	87	81	--	54	37	8.6	8.5	--	--	--	78	87	200	141	3	6	57	14	60	*
Meacham	4050	32.0	17.7	77.3	49.0	43.5	16	103	-15	1243	7888	4.38	.46	33.44	9.29	.00	3.00	34.1	156.1	22.9	80	--	--	40	--	--	---	---	--	--	--	91	70	204	152	47	18	31	3	170	4
Medford	1312	44.6	29.8	88.8	54.7	54.0	31	115	-3	862	4547	3.13	.17	18.22	9.16	.00	3.17	3.8	7.6	7.9	92	88	74	75	45	27	4.6	5.6	--	--	--	119	80	166	101	3	9	45	47	79	0
Pendleton	1492	36.9	24.2	89.0	59.9	52.7	25	110	-22	1066	5204	1.69	.26	13.01	3.03	.00	1.49	8.5	18.3	13.3	83	78	78	55	34	23	7.9	9.8	--	--	--	105	95	165	101	6	12	29	31	87	3
Portland (U)	30	44.2	34.7	79.2	57.8	54.6	58	107	3	791	4143	7.10	.42	40.09	17.45	.00	5.01	5.3	9.1	16.0	†87	†82	†78	†84	†62	†47	†10.2	†7.1	†61	†21	†69	†66	†70	†229	151	3	†7	†29	8	22	0
Portland	21	43.3	31.5	79.2	55.3	53.0	17	---	--	856	4632	6.17	.42	35.23	----	----	----	---	----	----	87	82	78	86	63	48	9.8	6.8	57	19	65	67	68	230	---	--	8	23	---	---	---
Roseburg (U) (1952)	479	47.5	34.5	83.4	54.3	54.6	75	109	-6	744	4122	4.93	.20	30.50	12.82	.00	4.15	3.1	6.6	8.0	91	87	79	85	54	38	3.9	5.1	40	f	f	f	f	f	133	1	4	49	14	34	*
Roseburg	505	47.1	31.8	83.2	51.2	53.1	8	104	9	791	4556	4.60	.20	30.63	15.74	T	4.03	3.5	6.5	9.1	--	85	75	--	54	34	4.1	6.1	37	22	81	77	88	200	134	2	7	56	20	59	0
Salem	195	44.8	31.9	83.2	52.2	53.1	23	108	-10	825	4574	7.12	.32	40.02	15.40	.00	3.16	4.0	6.5	10.8	88	84	79	87	54	39	8.8	6.7	--	--	--	74	87	204	151	2	6	40	16	60	*
Sexton Summit (R)	3836	41.6	30.0	76.4	50.0	48.1	16	100	8	905	6217	4.70	.29	31.09	14.71	.00	5.20	25.6	99.5	22.6	--	85	--	--	60	--	12.6	12.4	--	--	--	120	69	176	133	31	7	165	2	112	0

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature Normal (1921-1950) January Daily maximum	Temperature Normal January Daily minimum	Temperature Normal July Daily maximum	Temperature Normal July Daily minimum	Temperature Normal Annual	Temperature Extremes Length yrs	Temperature Extremes Record highest	Temperature Extremes Record lowest	Normal degree days (1921-1950) January	Normal degree days Seasonal	Precipitation (1921-1950) Wettest month	Precipitation (1921-1950) Driest month	Precipitation (1921-1950) Annual	Precipitation Extremes Wettest month	Precipitation Extremes Driest month	Precipitation Extremes Maximum in 24 hours	Snow, sleet Mean total January	Snow, sleet Mean total Seasonal	Snow, sleet Extreme Maximum in 24 hours	Relative humidity January 7:00 am EST	Relative humidity January 1:00 pm EST	Relative humidity January 7:00 pm EST	Relative humidity July 7:00 am EST	Relative humidity July 1:00 pm EST	Relative humidity July 7:00 pm EST	Wind Speed (mph) Mean hourly January	Wind Speed Mean hourly July	Wind Speed Fastest mile	Sunshine (percent of possible) January	Sunshine July	Sunrise to sunset Clear	Sunrise to sunset Partly cloudy	Sunrise to sunset Cloudy	Precipitation .01 inch or more	Snow, sleet 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max 90° and above	Temperature Min 32° and below	Temperature Min 0° and below
OREGON (Cont'd.)																																									
Troutdale (1952)	29	42.2	31.4	80.0	53.1	52.4	7	103	3	874	4775	7.24	0.53	42.92	11.25	0.03	2.84	8.9	14.8	7.3	85	80	76	91	63	50	11.7	4.7	--	--	--	67	77	221	164	5	9	26	13	32	0
PACIFIC AREA																																									
Canton Island	8	88.0	78.0	90.0	78.4	83.7	14	98	70	----	----	3.78	.27	20.04	16.39	T	5.21	.0	.0	.0	80	79	66	80	79	65	15.1	13.6	--	--	--	66	153	146	99	0	4	0	183	0	0
Guam (R)	361	83.8	71.5	87.0	72.2	78.8	4	95	59	----	----	14.50	2.37	86.55	20.59	.67	7.26	.0	.0	.0	--	--	--	--	--	--	---	---	30	73	69	--	---	---	263	0	21	0	10	0	0
Johnston Island	7	----	----	----	----	----	5	88	67	----	----	----	----	-----	15.80	.22	8.02	.0	.0	.0	76	77	68	78	66	68	13.3	14.6	49	75	83	25	230	110	171	0	0	0	0	0	0
Koror (R)	94	85.0	75.4	85.2	75.8	80.9	11	93	69	----	----	18.81	7.68	148.24	27.46	1.65	11.57	.0	.0	.0	90	81	76	92	82	79	---	---	--	--	--	2	65	298	279	0	11	0	49	0	0
Majuro, Marshall Is.	10	----	----	----	----	----	5	91	69	----	----	----	----	-----	24.26	.96	10.01	.0	.0	.0	81	75	78	86	79	81	12.0	8.6	36	--	--	6	[illegible]	308	257	0	18	0	*	0	0
Ponape (R)	120	86.4	76.0	88.0	72.7	81.0	10	96	67	----	----	19.66	8.15	182.72	38.65	2.40	22.48	.0	.0	.0	83	74	76	93	79	80	7.5	3.5	21	50	65	1	32	333	304	0	42	0	10	0	0
Truk, Moen Island	5	85.3	76.5	86.6	74.0	80.8	10	94	70	----	----	13.46	6.63	132.15	34.89	.84	14.92	.0	.0	.0	84	77	77	91	80	79	---	---	40	--	--	5	55	305	279	0	21	0	[illegible]	0	0
Wake Island	11	81.1	73.8	86.3	77.6	79.9	13	92	64	----	----	8.90	1.26	41.35	ø17.66	.27	ø15.00	.0	.0	.0	74	65	70	82	72	75	13.7	12.8	--	--	--	127	156	82	188	0	7	0	[illegible]	0	0
Yap (R)	55	85.4	76.1	87.6	75.7	81.6	12	97	69	----	----	16.60	4.71	122.31	29.44	1.08	10.45	.0	.0	.0	87	78	77	91	80	77	---	---	--	--	--	9	[illegible]	295	261	0	12	0	64	0	0
PENNSYLVANIA							73	111	-42							.00	34.50																								
Allentown	376	36.5	20.4	85.5	62.7	50.9	17	102	-10	1132	5880	4.78	2.73	42.34	12.10	.34	4.79	6.9	29.4	17.5	78	62	70	81	52	64	11.3	7.1	--	--	--	89	118	158	126	8	34	30	18	128	2
Erie	732	34.2	20.1	80.6	60.1	48.3	7	94	-5	1172	6558	3.50	2.15	34.56	9.87	.58	4.84	18.0	78.5	23.0	--	--	--	--	--	--	11.2	7.5	--	--	--	64	99	202	163	27	36	14	4	182	2
Harrisburg	335	38.6	23.6	85.6	65.1	53.0	22	102	-8	1051	5258	3.70	2.32	36.09	9.07	.23	4.36	8.4	31.1	21.0	72	58	65	78	51	61	8.2	6.0	68	46	69	84	106	175	126	8	33	22	24	106	*
Park Place (U)(1953)	1932	30.8	16.8	77.8	59.5	46.1	24	98	-22	1277	7175	5.54	2.52	46.65	19.81	.72	7.83	9.8	44.8	16.0	86	74	78	82	63	77	---	---	--	--	--	83	104	178	138	15	25	104	[illegible]	145	3
Philadelphia (U)(1954)	26	41.5	28.2	85.3	69.0	55.7	84	106	-11	933	4523	4.62	2.61	41.44	12.10	.09	5.89	5.7	21.2	21.0	74	65	68	75	56	66	10.9	8.7	88	45	64	109	122	134	123	6	27	10	14	76	*
Philadelphia	7	40.9	25.4	86.5	66.0	54.3	7	102	1	986	4866	4.58	2.60	41.23	9.70	.11	5.45	4.6	18.4	14.6	76	60	68	79	52	64	10.3	8.2	73	47	63	88	117	160	120	5	27	30	25	95	0
Pittsburgh (U)(1952)	749	40.2	25.8	85.1	65.6	53.9	79	103	-20	992	5048	3.83	2.35	36.23	9.81	.06	4.08	8.6	34.7	17.5	77	67	63	77	53	60	11.7	8.7	73	32	61	85	128	152	151	11	41	25	16	102	2
Pittsburgh	1151	36.6	21.3	82.8	61.8	50.6	8	99	-8	1116	5905	4.07	2.44	37.01	8.20	.40	3.56	7.9	38.8	12.5	78	67	71	83	54	62	10.9	7.8	--	38	66	62	105	198	149	12	35	17	9	124	[illegible]
Pittsburgh Allegheny (1952)	1252	38.0	22.7	83.4	63.3	51.9	17	102	-16	1073	5555	3.84	2.35	36.49	10.25	.53	3.23	9.0	41.7	17.5	81	67	74	81	53	61	11.7	8.4	64	[illegible]	61	67	120	178	156	12	42	31	[illegible]	114	2
Reading (U)	266	39.1	25.3	85.2	66.1	53.7	20	102	0	1017	5060	4.43	2.77	40.11	14.85	.17	6.08	7.7	28.0	18.7	71	--	--	75	--	--	11.6	8.5	80	44	62	93	108	164	125	8	33	7	24	92	*
Scranton (U)	746	35.4	21.0	83.2	61.9	50.1	†	†	†	1141	6047	4.43	2.02	36.61	†	†	†	†	†	†	†	†	--	†	†	--	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Scranton	940	34.3	19.5	83.0	61.4	49.3	5	96	-10	1181	6284	5.33	2.10	40.57	7.78	.35	3.09	7.5	47.4	15.5	77	65	70	82	56	65	9.2	[illegible]	60	33	55	68	113	184	142	13	37	27	6	141	3
Shippingport (1957)	736	33.8	20.7	80.5	60.0	51.0	2	92	-3	1163	5647	5.17	1.40	38.96	7.01	.71	3.30	3.6	17.4	9.0	R76	R64	--	R80	R55	--	3.3	2.0	63	--	--	--	-	--	144	5	40	21	10	126	1
Williamsport	527	36.0	20.9	85.2	61.4	50.7	16	102	-15	1132	5898	4.31	2.43	39.58	9.45	.67	4.38	7.9	38.8	13.7	76	63	70	85	52	65	---	---	--	--	--	69	117	179	145	10	--	--	8	130	1
RHODE ISLAND							73	102	-23							.00	12.13																								
Block Island	110	38.0	25.7	75.3	62.9	49.9	10	91	-1	1026	5843	3.67	2.55	38.74	11.36	T	8.52	4.1	20.8	11.5	--	--	--	--	--	--	---	---	--	--	--	100	110	155	114	7	18	75	*	84	*
Providence (U)(1952)	12	37.6	23.0	82.6	64.4	51.4	†	†	†	1076	5607	3.75	2.83	39.63	†	†	†	†	†	†	--	--	--	--	--	--	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Providence	55	36.8	20.6	80.0	61.9	49.4	7	97	-9	1125	6125	3.75	2.83	39.73	11.12	.39	5.47	8.9	35.4	16.9	71	59	65	80	57	70	11.9	10.3	--	53	61	109	100	156	131	10	22	27	6	119	2
SOUTH CAROLINA							76	111	-13							.00	13.25																								
Charleston (U)	9	61.4	39.2	89.4	70.8	65.2	18	103	14	472	1973	8.04	1.92	46.11	17.31	.08	8.84	T	.1	2.1	87	56	75	90	65	82	9.9	8.3	--	65	80	46	116	155	121	*	60	31	48	31	0
Charleston	41	61.4	39.2	89.4	70.8	65.2	18	103	14	472	1973	8.04	2.05	48.25	17.31	.08	8.84	T	.1	2.1	87	56	75	90	65	82	9.7	8.2	--	68	71	97	117	151	119	*	60	31	49	32	0
Columbia (U)	332	57.0	38.7	90.2	71.3	64.4	†	†	†	538	2284	5.74	2.00	41.58	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Columbia	217	58.1	35.9	91.9	70.8	64.0	13	107	4	566	2435	6.56	2.25	46.28	16.72	.29	7.66	.1	1.2	8.8	85	55	70	86	52	65	7.2	6.7	--	62	71	126	104	[illegible]	120	*	59	26	86	[illegible]	0
Florence	146	56.3	36.3	91.1	70.6	63.6	13	108	11	588	2507	6.45	2.27	45.46	13.68	.00	6.36	.2	1.1	4.8	83	53	68	87	56	72	7.6	6.8	--	--	--	120	[illegible]	136	109	*	57	27	74	44	0
Greenville	1018	51.6	35.0	87.9	68.8	61.0	7	101	1	673	3060	4.81	3.04	47.81	9.74	.52	5.79	.4	4.2	6.4	75	51	62	81	53	63	9.5	7.9	70	56	62	106	104	[illegible]	116	*	52	[illegible]	[illegible]	52	0
Spartanburg	801	52.1	34.7	88.7	69.1	61.2	17	104	3	670	3044	4.70	2.97	46.81	10.33	.13	6.85	.8	3.7	7.1	--	--	--	--	--	--	9.0	7.0	--	--	--	---	---	---	115	*	47	21	[illegible]	52	0
SOUTH DAKOTA							71	120	-58							.00	8.00																								
Huron	1282	24.8	2.1	89.5	61.3	45.7	21	110	-34	1597	7902	3.06	.45	17.56	7.12	T	4.15	6.3	36.8	10.7	79	72	76	87	51	48	11.7	[illegible]	77	[illegible]	78	[illegible]	[illegible]	116	84	13	41	14	[illegible]	[illegible]	[illegible]
Rapid City	3165	33.1	9.1	85.8	58.8	46.1	18	109	-27	[illegible]	7535	3.36	.34	17.12	7.35	T	3.17	5.7	36.7	16.3	71	60	66	69	41	39	9.9	10.1	66	[illegible]	72	108	[illegible]	141	94	11	16	14	[illegible]	167	[illegible]
Sioux Falls	1420	24.4	4.0	87.9	61.6	45.8	15	108	-27	1575	7848	4.25	.67	25.27	7.94	T	4.32	5.9	41.4	18.9	72	63	69	83	51	70	11.1	9.4	70	--	--	101	107	154	[illegible]	12	44	[illegible]	[illegible]	[illegible]	[illegible]
TENNESSEE							78	113	-32							.00	11.00																								
Bristol	1519	48.5	28.6	85.5	64.0	56.4	15	102	-5	818	4148	5.14	2.39	41.36	9.73	.41	3.10	3.4	12.8	16.2	85	65	71	88	56	67	7.0	4.3	--	--	--	90	114	161	135	1	47	39	14	86	*
Chattanooga	670	51.6	31.9	89.6	67.0	60.0	21	106	1	725	3384	6.05	2.69	53.78	13.59	.20	5.25	1.1	3.4	8.7	82	62	68	87	56	64	7.3	5.1	52	40	63	108	113	144	114	2	57	35	69	[illegible]	[illegible]
Knoxville	950	49.8	31.1	89.1	67.6	59.3	19	103	-2	760	3590	4.91	2.53	45.69	11.74	.20	5.08	2.2	10.0	18.2	83	65	69	84	55	62	8.6	6.5	71	[illegible]	59	100	[illegible]	[illegible]	127	5	50	28	[illegible]	[illegible]	*
Memphis (U)	271	49.3	34.5	89.4	73.2	62.4	†	†	†	716	3006	5.38	2.50	46.81	†	†	†	†	†	----	--	--	--	--	--	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Memphis	263	50.3	32.9	91.1	71.3	61.8	19	106	-11	725	3137	5.59	2.55	49.57	12.29	.04	4.94	2.1	4.8	6.5	81	66	72	85	56	59	11.6	7.6	54	42	71	118	[illegible]	146	102	2	53	[illegible]	72	7	*
Nashville	577	48.9	30.9	90.6	69.3	60.1	21	107	-15	778	3513	5.28	2.52	45.19	13.92	.28	4.91	3.6	10.4	9.2	84	68	73	86	55	61	9.0	6.0	73	56	63	104	110	151	119	4	56	[illegible]	69	72	
Oak Ridge (R)	905	48.8	29.2	88.3	65.1	57.8	13	105	0	806	3885	6.08	2.42	53.92	13.27	.41	7.48	1.8	7.2	12.0	--	--	--	--	--	--	4.9	[illegible]	--	--	--	110	98	157	126	4	56	57	42	80	*
Oak Ridge Area	886	48.7	30.4	87.8	65.6	58.1	16	103	0	787	3823	5.64	2.77	52.38	12.84	.48	7.75	---	----	----	--	--	--	--	--	-	5.8	5.8	-	--	--	---	---	---	119	--	--	--	59	78	*
TEXAS							83	120	-23							.00	38.20																								
Abilene	1759	55.1	31.4	94.6	71.5	64.1	21	109	-9	673	2657	3.68	.88	22.58	13.19	.00	5.10	1.4	3.4	5.0	76	54	55	76	41	39	13.0	11.3	109	[illegible]	83	[illegible]	97	117	64	1	42	5	104	15	*
Amarillo	3590	48.9	21.6	91.8	63.8	56.6	20	108	-14	921	4345	3.25	.64	21.15	9.85	.00	6.75	4.3	13.1	12.2	72	52	53	77	44	42	12.8	12.1	84	67	[illegible]	160	107	98	69	3	50	23	71	[illegible]	
Austin	615	59.8	40.0	94.4	73.7	68.2	19	109	-2	484	1713	4.37	1.67	35.27	12.31	.00	7.22	.7	.9	7.0	82	63	63	89	51	47	9.9	8.8	57	47	79	119	118	128	84	*	38	22	114	19	*
Big Spring (1952)	2569	55.8	33.0	94.6	70.7	64.6	51	117	-7	639	2480	2.78	.60	17.39	12.89	.00	6.77	.8	2.7	3.5	--	--	--	--	--	--	---	---	--	--	--	175	109	81	54	[illegible]	40	11	110	65	*
Brownsville	16	69.6	51.4	92.5	75.1	73.6	21	104	22	219	617	5.13	1.11	27.66	17.12	T	8.18	T	T	T	89	65	75	93	55	65	12.1	11.7	57	47	81	97	138	130	73	0	23	24	115	[illegible]	0
Corpus Christi	43	66.3	47.4	92.5	75.0	71.7	22	104	18	299	924	4.70	1.39	28.06	14.54	.00	7.68	.1	.1	1.1	88	67	75	93	58	67	12.0	11.6	70	48	86	113	117	135	75	*	34	26	100	5	0
Dallas	476	55.3	36.0	95.4	75.6	66.5	20	111	2	607	2272	4.97	1.83	34.51	13.85	T	9.18	1.0	1.7	3.3	81	62	62	80	50	47	10.2	10.2	65	[illegible]	78	145	94	126	81	1	43	7	102	33	0
Del Rio (1956)	1091	62.2	41.6	93.3	[illegible]	69.8	51	111	11	419	1407	2.51	.80	18.62	13.71	.00	8.88	.4	.7	4.7	81	58	53	80	50	41	7.8	9.7	62	53	[illegible]	153	118	94	61	*	24	6	118	14	0
El Paso	3920	55.8	30.9	93.5	69.0	63.3	21	109	-6	670	2641	1.32	.27	7.84	6.29	.00	2.89	1.6	4.4	7.3	63	44	38	59	36	29	10.4	10.1	70	75	77	194	99	72	44	1	36	1	101	52	*
Fort Worth Meacham Fld. (1952)	688	54.9	35.5	95.0	74.2	65.9	15	110	-2	622	2361	4.84	1.75	32.29	16.97	T	6.05	1.5	2.9	4.5	n79	n60	n61	n80	n49	n17	12.4	10.6	61	51	76	139	104	122	84	1	45	10	98	34	*

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F) Normal (1921-1950) January Daily maximum	Temperature Normal January Daily minimum	Temperature Normal July Daily maximum	Temperature Normal July Daily minimum	Temperature Normal Annual	Temperature Extremes Length yrs	Temperature Extremes Record highest	Temperature Extremes Record lowest	Normal degree days (1921-1950) January	Normal degree days Seasonal	Precipitation (inches) (1921-1950) Wettest month	Precipitation (1921-1950) Driest month	Precipitation (1921-1950) Annual	Precipitation Extremes Wettest month	Precipitation Extremes Driest month	Precipitation Extremes Maximum in 24 hours	Snow, sleet Mean total January	Snow, sleet Mean total Seasonal	Snow, sleet Extreme Maximum in 24 hours	Relative humidity (percent) January 7:00 am EST	Relative humidity January 1:00 pm EST	Relative humidity January 7:00 pm EST	Relative humidity July 7:00 am EST	Relative humidity July 1:00 pm EST	Relative humidity July 7:00 pm EST	Wind Speed (mph) Mean hourly January	Wind Speed Mean hourly July	Wind Speed Fastest mile	Sunshine (percent of possible) January	Sunshine July	Annual mean number of days Sunrise to sunset Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max 90° and above	Temperature Min 32° and below	Temperature Min Zero and below
TEXAS (Cont'd.)																																									
Fort Worth Amon Carter	544	54.9	35.6	95.2	74.9	66.0	7	109	7	619	2338	4.92	1.88	33.78	12.64	0.11	5.91	0.9	1.8	3.8	81	62	63	77	46	42	12.7	11.6	73	--	--	151	94	120	79	*	46	9	110	42	0
Galveston (U) (1957)	7	59.8	49.2	87.4	78.6	70.1	86	101	8	356	1211	5.44	2.98	45.29	26.01	.00	14.35	T	.2	15.4	87	77	83	82	69	74	11.4	9.6	91	50	72	143	124	98	98	*	48	20	13	4	0
Galveston	5	60.4	48.2	88.7	77.9	70.1	10	97	18	362	1233	5.82	3.24	48.08	25.06	T	8.53	T	.2	2.0	84	74	79	83	69	71	13.3	11.5	--	--	--	111	119	135	92	*	52	31	35	2	0
Houston (U)	41	61.9	45.7	92.3	75.2	70.0	22	105	10	378	1276	4.84	2.89	45.46	17.64	.01	10.83	.3	.4	3.0	86	66	72	92	58	65	10.8	8.3	73	46	69	95	123	147	106	*	56	16	90	6	*
Houston	50	62.6	44.0	92.2	72.9	68.9	17	---	--	394	1388	4.91	2.70	46.93	22.31	T	-----	---	---	----	85	68	73	90	58	68	---	---	--	--	--	---	---	--	--	--	--	--	---	---	---
Laredo	500	68.8	46.4	99.7	75.7	74.3	17	110	18	270	781	3.18	.89	19.53	8.62	.00	5.55	.1	.2	2.0	82	59	53	83	45	40	9.7	15.2	61	--	--	126	118	121	58	*	30	13	171	4	0
Lubbock	3243	51.8	25.7	92.0	66.6	59.5	14	107	-9	812	3587	3.36	.55	18.91	7.80	.00	5.14	2.0	8.2	8.0	74	50	51	77	46	40	12.9	12.3	70	--	--	172	102	91	61	3	44	14	88	104	*
Midland	2854	56.6	31.8	94.2	69.7	64.2	13	109	-1	645	2565	2.14	.62	16.23	4.99	.00	3.64	1.5	2.8	5.9	71	46	44	71	43	37	8.7	9.3	67	--	--	170	94	101	47	1	39	15	113	58	*
Palestine (U) (1952)	491	57.2	39.6	92.0	73.0	66.5	71	108	-6	531	1980	4.69	1.76	40.54	17.25	T	12.06	.8	1.8	9.0	82	64	65	87	54	58	8.0	6.2	45	46	79	132	123	110	94	1	46	12	73	22	*
Port Arthur (U)(1952)	5	60.9	46.5	90.0	76.1	69.5	36	102	11	381	1340	6.48	3.25	53.24	24.25	.00	17.76	.2	.3	2.7	--	--	--	--	--	--	11.0	9.0	91	47	68	125	124	116	108	*	72	20	56	6	0
Port Arthur	16	61.7	44.0	90.7	72.6	68.1	7	100	23	406	1517	6.80	2.93	55.35	18.71	.06	7.53	T	1.0	4.4	87	69	76	93	64	70	12.7	8.9	72	42	65	90	129	146	105	*	65	37	83	10	0
San Angelo	1903	57.2	37.3	94.4	71.0	66.2	13	111	1	556	2107	2.96	.95	19.86	9.20	.00	6.03	1.1	2.1	5.1	73	51	46	74	43	37	10.7	10.0	69	--	--	166	95	104	53	*	37	5	113	42	0
San Antonio	792	60.9	40.3	95.1	73.2	68.8	18	106	0	462	1579	3.52	1.40	27.99	15.78	.00	6.97	.4	.5	4.7	81	61	60	88	49	44	9.1	8.9	74	46	77	111	117	137	79	*	38	25	119	18	*
Victoria	110	64.1	46.2	92.8	76.8	71.2	14	107	12	352	1126	4.13	2.05	35.74	17.25	.01	8.67	.1	.6	4.0	85	63	69	93	53	60	11.2	9.2	72	--	--	98	124	143	91	*	46	28	115	10	0
Waco	500	57.1	37.5	95.4	74.6	67.3	18	108	-5	557	2025	4.15	1.38	33.05	13.37	.00	7.18	.9	1.2	7.0	83	64	64	83	50	46	12.4	11.3	64	--	--	131	104	130	78	*	48	13	109	27	*
Wichita Falls	1002	51.7	29.4	94.8	72.7	63.1	17	110	-12	756	3025	3.86	1.31	26.69	12.03	.00	5.61	2.0	5.5	5.2	77	57	60	76	48	43	11.2	10.4	92	--	--	162	97	106	67	1	48	11	106	61	*
UTAH							70	116	-50							.00	4.50																								
Blanding (1952)	6036	38.1	15.0	87.3	57.3	49.6	46	110	-23	1190	6138	1.47	.58	12.77	7.01	.00	-----	---	---	----	--	--	--	--	--	--	---	---	--	--	--	---	---	--	--	--	--	--	---	---	---
Milford	5028	36.0	11.5	92.5	55.5	49.0	12	104	-28	1277	6445	1.06	.40	8.47	1.98	.00	1.20	11.3	37.8	16.3	--	69	65	--	25	22	---	---	--	--	--	155	104	106	55	13	33	7	60	178	14
Salt Lake City (U) (1953)	4260	36.6	21.1	91.7	64.7	53.0	80	105	-20	1119	5463	1.91	.59	15.81	5.81	.00	2.72	12.5	55.3	15.3	--	--	--	--	--	--	---	---	--	--	--	---	---	--	--	--	--	--	31	106	1
Salt Lake City	4220	35.9	17.0	92.3	60.8	51.3	32	107	-30	1194	5866	1.76	.61	14.79	4.90	.00	2.41	13.6	51.7	15.4	81	70	72	54	27	22	7.5	9.4	71	47	82	136	106	123	86	17	35	10	52	134	4
Wendover (USAF)	4237	----	----	----	----	----	23	112	-19	----	----	----	----	-----	2.59	.00	-----	2.7	6.6	3.1	--	--	--	--	--	--	---	---	--	--	--	---	---	---	43	3	--	--	55	128	1
VERMONT							73	105	-50							.00	8.77																								
Burlington	331	27.6	8.2	82.4	58.4	44.5	17	101	-30	1460	7865	3.75	1.58	32.27	11.54	.56	3.59	18.5	69.1	14.0	80	69	76	76	54	66	10.1	8.1	72	35	63	61	106	198	151	19	23	13	9	155	21
VIRGINIA							70	110	-29							.00	11.20																								
Cape Henry (U) (1952)	16	49.4	35.5	84.8	70.6	59.7	79	104	5	698	3307	5.31	2.48	41.64	16.82	.00	7.18	2.0	7.1	12.0	80	69	76	82	68	80	13.1	9.6	134	50	67	131	117	117	119	3	39	23	19	37	0
Lynchburg	947	46.6	28.7	86.1	65.9	56.6	16	103	2	846	4153	4.35	2.37	39.65	11.36	.61	4.98	3.9	14.7	14.5	76	58	65	84	55	70	9.0	7.0	56	48	63	107	109	149	126	4	44	44	29	82	0
Norfolk (U)	11	50.7	35.4	86.7	70.7	60.7	f	f	f	679	3119	6.05	2.45	43.26	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f
Norfolk	26	50.0	33.0	86.0	68.9	59.2	12	103	11	729	3454	6.05	2.45	43.37	12.83	.36	6.79	2.1	5.6	11.4	77	60	71	81	58	72	11.5	8.4	78	58	65	108	106	151	117	2	41	26	37	49	0
Richmond (U)	162	48.4	30.7	87.3	68.4	56.6	f	f	f	787	3720	5.38	2.41	42.17	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f
Richmond	162	48.1	28.4	87.8	67.2	57.7	31	104	-12	828	3955	5.64	2.49	42.98	18.87	.35	8.79	4.3	12.0	21.6	81	58	71	84	55	73	8.2	7.0	68	49	70	101	108	156	116	4	38	31	45	84	*
Roanoke	1174	46.6	29.2	86.8	65.0	56.6	13	104	3	840	4152	4.91	2.65	41.67	9.12	.42	4.95	5.1	18.2	17.4	72	55	62	82	52	64	9.9	6.3	--	--	--	97	118	150	123	8	41	25	42	86	0
WASHINGTON							94	118	-42							.00	12.00																								
Ellensburg (1952)	1727	32.6	15.6	84.7	54.3	47.9	12	103	-28	1268	6542	1.47	.14	8.53	3.13	T	1.14	13.2	38.5	11.2	--	--	--	--	--	--	5.8	17.2	--	--	--	110	99	156	81	14	10	36	20	160	9
Kelso (1952)	17	43.6	31.1	75.8	50.2	50.7	6	96	-1	856	5239	6.74	.67	41.06	10.75	.05	3.06	10.3	16.9	7.7	89	84	80	93	65	56	---	---	--	--	--	57	83	225	161	5	--	--	3	75	*
North Head (1952)	194	46.5	38.0	61.2	53.4	50.7	65	97	11	704	5211	9.03	.85	54.34	22.28	.00	4.29	2.7	5.2	8.0	87	80	84	92	87	84	16.4	14.0	113	28	49	67	90	208	194	--	3	44	*	11	0
Olympia	190	43.3	30.6	76.3	49.2	50.0	19	103	-1	868	5501	8.66	.66	45.93	19.84	.00	4.93	8.0	16.8	13.7	91	87	80	91	61	45	7.0	5.7	--	--	--	53	91	221	161	5	4	92	5	84	*
Omak (1952)	1228	27.8	14.9	87.9	54.2	47.4	43	114	-26	1352	6806	1.52	.34	11.27	5.31	.00	2.21	8.6	29.3	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	59	--	--	--	---	---	---
Port Angeles (1952)	11	43.7	36.5	63.9	51.0	49.0	6	80	11	772	5850	4.34	.44	23.03	7.15	.09	3.34	6.3	9.4	5.6	82	78	77	89	79	76	9.7	13.8	--	--	--	62	84	219	141	5	4	40	0	16	0
Seattle (U)	14	45.2	36.2	75.1	56.1	53.2	27	100	11	753	4438	5.34	.52	32.05	10.93	T	3.31	4.9	8.6	11.5	85	79	73	84	62	46	7.8	7.2	65	27	62	71	93	201	151	3	6	--	2	15	0
Seattle (Boeing Fld.)	14	45.0	33.0	76.2	54.1	52.2	17	---	--	806	4785	5.72	.58	34.28	15.43	T	----	---	----	----	86	80	74	86	63	47	---	---	--	--	--	---	---	---	---	--	--	--	---	---	---
Seattle-Tacoma	386	43.0	31.4	75.0	52.8	50.7	16	99	0	862	5275	5.68	.58	33.93	12.92	T	3.41	7.4	15.7	21.4	86	83	81	89	67	48	11.1	9.6	--	--	--	54	82	229	163	5	8	53	2	51	*
Spokane	2357	30.2	19.6	82.4	56.8	47.1	13	102	-24	1243	6852	2.21	.36	14.97	5.71	T	1.67	21.2	58.0	13.0	84	81	79	64	38	26	7.9	7.8	56	26	83	90	87	188	118	19	11	46	16	142	7
Stampede Pass (R)	3958	27.5	19.8	67.2	46.5	39.9	17	90	-11	1280	9149	14.66	1.29	93.99	29.06	.19	7.01	85.8	461.5	36.2	93	92	92	86	66	59	---	---	--	--	--	67	57	241	204	85	8	251	*	191	3
Tacoma (U) (1952)	127	44.2	34.4	73.7	54.9	51.8	56	98	7	797	4866	5.90	.61	35.20	18.87	.00	3.79	5.7	12.1	16.0	92	82	81	87	61	50	7.9	7.6	61	21	61	73	107	185	150	4	5	30	*	32	0
Tatoosh Island (R)	101	44.9	39.0	59.2	51.7	49.3	58	88	14	713	5724	12.04	1.99	76.04	22.57	.02	5.91	3.7	7.4	12.0	85	83	83	95	89	87	19.9	9.9	94	26	48	58	79	228	197	3	5	58	0	7	0
Walla Walla (U)	949	37.7	26.3	89.3	63.0	54.2	46	112	-16	1023	4848	1.86	.28	15.12	4.52	.00	2.02	8.3	20.6	14.0	--	76	--	--	34	--	5.1	5.4	67	25	86	121	90	154	106	7	11	14	37	66	2
Yakima	1061	35.9	17.8	89.9	52.9	50.2	14	105	-25	1181	5845	1.10	.18	7.23	3.25	.00	1.27	10.7	24.9	8.5	84	77	74	69	34	25	5.3	7.5	--	34	86	110	89	166	71	9	8	20	34	155	6
WEST INDIES							60	103	40							.00																									
St. Croix (1953)	53	82.5	69.1	88.2	75.5	79.1	6	95	62	0	0	5.84	2.05	42.35	15.23	.17	7.76	.0	.0	.0	76	66	80	77	70	84	12.7	13.0	--	--	--	39	216	110	196	0	43	0	27	0	0
San Juan (U)	47	79.6	70.2	84.2	75.7	78.0	62	96	62	0	0	6.51	2.42	60.07	16.88	.05	10.55	.0	.0	.0	86	66	79	81	67	78	8.5	9.8	80	69	61	54	202	109	209	0	49	0	9	0	0
San Juan	9	80.1	69.5	86.0	75.0	78.1	--	---	--	----	----	7.49	2.78	67.80	-----	----	----	---	----	----	f	f	f	f	f	f	f	f	f	f	f	f	f	f	---	--	--	--	---	---	---
Santa Isabel (1953)	28	83.0	64.9	86.9	72.0	76.7	8	96	57	----	----	4.54	.48	32.66	12.37	.05	6.62	.0	.0	.0	78	59	76	61	58	67	6.7	7.4	--	--	--	105	175	85	99	0	70	0	35	0	0
Swan Island (1954)	28	82.5	73.3	87.4	77.4	80.7	12	92	64	0	0	9.25	1.00	53.82	27.61	.02	10.77	---	----	----	80	72	80	85	75	81	10.5	9.4	40	--	--	95	159	111	157	0	45	0	19	0	0
WEST VIRGINIA							70	112	-37							.00	19.00																								
Charleston	950	46.3	26.5	87.3	63.5	55.8	13	102	-5	887	4417	5.45	2.81	45.12	10.45	.39	4.17	6.7	23.3	15.1	77	63	68	88	62	67	8.0	5.3	--	--	--	57	117	191	152	6	45	106	25	98	*
Elkins (1958)	1970	42.8	21.5	82.5	57.4	50.4	60	99	-28	1017	5773	5.26	2.86	44.04	11.10	.26	5.45	10.9	47.1	18.8	82	65	77	94	61	76	6.3	3.7	72	33	56	69	116	180	170	19	45	67	3	132	5
Huntington (U)	565	48.0	28.0	88.6	65.2	57.4	20	105	-2	837	4073	4.82	2.43	41.89	8.93	.22	4.23	4.2	16.5	12.0	--	--	--	--	--	--	---	---	--	--	--	---	---	---	131	5	--	--	47	91	*
Parkersburg (U)	615	42.7	26.1	86.2	65.1	54.9	72	106	-27	949	4750	4.18	2.12	39.21	12.05	.07	4.81	6.7	24.3	18.3	82	66	74	80	52	67	7.2	5.1	66	30	63	109	103	153	144	7	43	11	23	97	2
Petersburg (U) (1953)	1013	44.6	23.0	88.0	60.6	53.8	13	102	-14	967	4966	3.48	1.64	30.77	17.15	.36	7.41	5.9	20.7	11.6	76	51	60	90	53	68	---	---	--	--	--	83	105	177	125	6	40	36	34	116	1
WISCONSIN							70	114	-54							.00	11.72																								
Green Bay	689	24.5	7.7	81.1	58.7	43.6	11	99	-31	1516	8259	3.57	1.26	26.56	7.75	T	3.68	7.9	39.8	9.3	77	71	75	86	58	63	11.0	8.4	109	45	65	96	101	168	117	13	37	30	6	167	25

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F) Normal (1921 1950) January Daily maximum	Temperature Normal January Daily minimum	Temperature Normal July Daily maximum	Temperature Normal July Daily minimum	Temperature Normal Annual	Temperature Extremes Length yrs	Temperature Extremes Record highest	Temperature Extremes Record lowest	Normal degree days (1921 1950) January	Normal degree days Seasonal	Precipitation (inches) (1921 1950) Wettest month	Precipitation (1921 1950) Driest month	Precipitation (1921 1950) Annual	Precipitation Extremes Wettest month	Precipitation Extremes Driest month	Precipitation Extremes Maximum in 24 hours	Snow, sleet Mean total January	Snow, sleet Mean total Seasonal	Snow, sleet Extreme Maximum in 24 hours	Relative humidity (percent) January 7 00 a m EST	Relative humidity January 1 00 p m EST	Relative humidity January 7 00 p m EST	Relative humidity July 7 00 a m EST	Relative humidity July 1 00 p m EST	Relative humidity July 7 00 p m EST	Wind Speed (m p h) Mean hourly January	Wind Speed Mean hourly July	Wind Speed Fastest mile	Sunshine (per cent of possible) January	Sunshine July	Annual mean number of days Sunrise to sunset Clear	Sunrise to sunset Partly cloudy	Sunrise to sunset Cloudy	Precipitation .01 inch or more	Snow, sleet 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max 90° and above	Temperature Min 32° and below	Temperature Min 0° and below
WISCONSIN (Cont'd.)																																									
La Crosse	652	25.0	6.3	85.1	62.8	46.2	10	103	-37	1528	7650	3.87	1.15	28.96	9.16	0.02	3.84	7.5	41.1	15.7	77	66	71	86	58	58	9.0	7.8	60	--	--	93	98	174	109	10	45	23	14	153	23
Madison (U)	938	26.7	11.8	82.2	64.0	46.9	88	107	-29	1417	7300	4.11	1.27	30.71	10.69	T	5.31	9.6	37.9	12.9	--	--	--	--	--	--	---	---	--	--	--	---	---	---	115	11	--	--	8	143	18
Madison	857	27.9	10.3	85.7	60.2	46.6	21	102	-37	1423	7417	4.02	1.18	30.05	10.93	.06	5.25	9.1	39.3	10.8	76	68	73	83	53	59	10.7	8.5	77	47	72	98	98	169	114	12	38	23	19	156	21
Milwaukee (U)	620	30.0	16.0	80.1	64.4	47.7	--	---	--	1302	6944	3.36	1.42	28.87	----	----	----	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	---
Milwaukee	672	29.2	14.5	81.2	61.4	46.8	20	101	-24	1336	7205	3.33	1.32	27.62	9.87	.15	5.28	13.0	42.5	16.7	77	71	74	82	59	64	13.2	9.8	73	41	71	96	102	167	119	12	37	26	10	141	12
WYOMING							101	114	-63							.00	5.50																								
Casper	5319	31.8	12.8	86.3	55.8	45.1	21	104	-40	1324	7638	2.32	.65	14.12	5.75	T	3.09	9.7	70.3	20.6	67	56	60	65	30	25	17.6	10.5	--	--	--	105	115	145	92	22	38	6	26	174	16
Cheyenne	6131	37.1	13.8	82.6	53.6	44.9	25	100	-34	1225	7562	2.46	.52	16.28	5.35	T	2.68	6.4	57.1	16.5	62	48	56	73	35	40	14.3	9.7	69	61	69	103	135	127	102	18	53	25	11	178	13
Lander	5563	28.0	5.6	84.4	56.3	43.2	14	101	-31	1494	8303	2.57	.50	14.21	6.88	T	3.56	7.6	92.9	23.1	66	58	58	56	33	29	6.3	7.6	77	66	78	127	125	113	69	23	32	2	21	187	20
Rock Springs (1953)	6741	27.8	8.2	83.7	53.8	42.5	22	98	-33	1457	8473	1.10	.41	8.82	3.71	T	2.80	6.4	44.6	8.9	73	65	66	58	27	26	13.6	10.1	--	--	--	102	121	142	81	16	40	7	7	196	19
Sheridan	3942	32.8	7.4	86.1	55.0	44.5	20	106	-31	1392	7903	2.64	.64	16.78	9.54	.07	3.84	8.9	67.6	26.7	73	63	66	72	36	34	7.6	7.4	84	58	76	104	114	147	107	23	38	6	27	18[illegible]	22

Data from airport or from airport and Urban site records combined.
U indicates Urban, R indicates Rural sites.
Data for this table are based on records through 1960 except as indicated in notes.
Date in Parenthesis after station name indicates last year included in summarization of data.
Normal values are based on the period 1921-1950, and are means adjusted to represent observations taken at the present standard location.
Degree days are based on a daily average of 65 F.
Leap Year Annual Precipitation Normals are increased by normal precipitation for February 29.

Fastest mile is the speed of the wind recorded in the shortest time on an automatic recording wind instrument.
Clear Day averages 0-3 tenths sky cover, Partly Cloudy 4-7 tenths and Cloudy 8-10 tenths.
Heavy Fog includes data formerly referred to as "Dense" or "Thick." The upper visibility limit for heavy fog is 1 4 mile.

*	Less than one-half.
-	No record.
#	Number of days Maximum 70°F or above (Alaskan stations).
a	Sun below horizon continuously November 18 to January 24.
b	Sun below horizon continuously November 26 to January 16.
†	Combined Records, city office and airport.
+	Airport data.
n	Relative Humidity readings reported 30 minutes later.
p	Relative Humidity readings reported one hour later.
s	Relative Humidity readings reported one hour earlier.
g	8 00 a.m., and 2 00 p.m. EST.
k	Relative Humidity readings NOON Local Time.
ø	Estimated amounts during typhoon.
E	Estimated value.
‡	Mt. Washington excluded.
T	Trace, an amount too small to measure.

ELEVATIONS—STATION PRESSURE

YEAR 1960

State and station	Ft.
ALABAMA	
Birmingham	700
Huntsville	614
Mobile	57
Montgomery	218
ALASKA	
Anchorage	132
Annette	110
Barrow	13
Barter Island	50
Bethel	38
Cold Bay	103
Cordova	48
Fairbanks	454
Juneau	24
King Salmon	49
Kotzebue	16
McGrath	338
Nome	22
Northway	1721
Shemya	102
St. Paul Island	28
Yakutat	31
ARIZONA	
Flagstaff	7018
Phoenix	1107
Prescott	5022
Tucson	2555
Winslow	4883
Yuma	141
ARKANSAS	
Fort Smith	463
Little Rock	357
Texarkana	368
CALIFORNIA	
Bakersfield	492
Bishop	4145
Blue Canyon	5283
Burbank	725
Eureka (U)	60
Fresno	327
Long Beach	40
Los Angeles (U)	512
Los Angeles	104
Mt. Shasta (R)	3587
Oakland	7
Point Arguello (R)	367
Red Bluff	353
Sacramento	25
Sandberg (R)	4523
San Diego	87
San Francisco (U)	155
San Francisco	18
Santa Maria	238
COLORADO	
Alamosa	7543
Colorado Springs	6170
Denver	5292
Grand Junction	4602
Pueblo	4690
CONNECTICUT	
Bridgeport	17
Hartford	159
Middletown (Canel)	133
New Haven	13
DELAWARE	
Wilmington	80
DISTRICT OF COLUMBIA	
Washington (U)	
Wash. Nat'l AP	112
FLORIDA	
Apalachicola (U)	35
Daytona Beach	41
Fort Myers	12
Jacksonville	31
Key West	21
Lakeland (U)	----
Miami	25
Miami Beach	---
Orlando	119
Pensacola (U)	----
Tallahassee	68
Tampa	35
West Palm Beach	21
GEORGIA	
Athens	811
Atlanta	1173
Augusta	182
Columbus	394
Macon	370
Rome	643
Savannah	65
Thomasville	---
HAWAII	
Hilo	36
Honolulu	15
Lihue	148
IDAHO	
Boise	2739
Idaho Falls 46W (R)	4939
Idaho Falls 42NW (R)	----
Lewiston	1436
Pocatello	4478
ILLINOIS	
Cairo (U)	357
Chicago (O'Hare)	675
Chicago (Midway)	623
Moline	606
Peoria	609
Rockford	743
Springfield	636
INDIANA	
Evansville	431
Fort Wayne	857
Indianapolis	823
South Bend	773
IOWA	
Burlington	702
Des Moines	860
Dubuque	599
Sioux City	1138
Waterloo	878
KANSAS	
Concordia (U)	1392
Dodge City	2509
Goodland	3688
Topeka	987
Wichita	1358
KENTUCKY	
Lexington	989
Louisville	525
LOUISIANA	
Alexandria	118
Baton Rouge	76
Lake Charles	32
New Orleans (U)	53
New Orleans	30
Shreveport	249
MAINE	
Caribou	628
Portland	103
MARYLAND	
Baltimore (U)	
Baltimore	123
Frederick	----
MASSACHUSETTS	
Blue Hill Obs. (R)	640
Boston	124
Nantucket	12
Pittsfield	----
Worcester	1001
MICHIGAN	
Alpena	693
Detroit (City AP)	730
Detroit (Metro. Wayne Co.)	664
Detroit (Willow Run)	777
Escanaba (U)	612
Flint	766
Grand Rapids	707
Lansing	878
Marquette (U)	734
Muskegon	633
Sault Ste. Marie	614
MINNESOTA	
Duluth	1133
International Falls	1126
Minneapolis-St. Paul	919
Rochester	1320
St. Cloud	1043
MISSISSIPPI	
Jackson	331
Meridian	375
Vicksburg (U)	247
MISSOURI	
Columbia	784
Kansas City	963
St. Joseph	967
St. Louis (RFC) (U)	----
St. Louis (Lambert)	568
Springfield	1324
MONTANA	
Billings	3570
Butte	5533
Glasgow	2086
Great Falls	3657
Havre (U)	2507
Helena	4123
Kalispell	----
Miles City	----
Missoula	3263
NEBRASKA	
Grand Island	1856
Lincoln (U)	----
Norfolk	1551
North Platte	2821
Omaha (Eppley AP)	1105
Omaha (N. Omaha AP)	1323
Scottsbluff	3958
Valentine	2598
NEVADA	
Elko	5078
Ely	6262
NEVADA (Cont'd.)	
Las Vegas	1869
Reno	4527
Winnemucca	4399
NEW HAMPSHIRE	
Concord	289
Mt. Washington Obs.	6267
NEW JERSEY	
Atlantic City (U)	52
Atlantic City (Exp. Cntr.)	67
Newark	30
Trenton (U)	190
NEW MEXICO	
Albuquerque	4972
Clayton	5052
Raton	6382
Roswell	3566
Silver City	5453
NEW YORK	
Albany	97
Binghamton	1638
Buffalo	768
New York Central Park	156
New York (U)	33
New York (Inter. AP)	22
New York (LaGuardia)	52
Rochester	523
Schenectady	217
Syracuse	596
NORTH CAROLINA	
Asheville (U)	2253
Cape Hatteras (R)	11
Charlotte	779
Greensboro	886
Raleigh	376
Wilmington	72
Winston-Salem	967
NORTH DAKOTA	
Bismarck	1677
Devils Lake (U)	1478
Fargo	940
Williston (U)	1878
OHIO	
Akron	1052
Cincinnati (U)	627
Cincinnati Obs.	----
Cincinnati	877
Cleveland	762
Columbus (U)	----
Columbus	822
Dayton	1003
Mansfield	1312
Sandusky (U)	629
Toledo	692
Youngstown	1186
OKLAHOMA	
Oklahoma City	1214
Tulsa	674
OREGON	
Astoria	22
Burns (U)	4170
Eugene	373
Meacham	----
Medford	1329
Pendleton	1495
Portland	154
Roseburg	510
Salem	201
Sexton Summit (R)	3841
PACIFIC AREA	
Canton Island	11
Eniwetok	13
Guam (R)	365
Johnston Island	17
Koror (R)	109
Kwajalein	26
Majuro	10
Ponape (R)	151
Truk (Moen Island)	8
Wake Island	12
Yap (R)	56
PENNSYLVANIA	
Allentown	385
Erie	714
Harrisburg	378
Philadelphia (U)	----
Philadelphia	114
Pittsburgh (U)	----
Pittsburgh	842
Reading (U)	323
Scranton	948
Shippingport	----
Williamsport	525
RHODE ISLAND	
Block Island	118
Providence	159
SOUTH CAROLINA	
Charleston (U)	----
Charleston	48
Columbia	347
Florence	151
Greenville	1040
Spartanburg	824
SOUTH DAKOTA	
Huron	1301
Rapid City	3259
Sioux Falls	1427
TENNESSEE	
Bristol	1525
Chattanooga	762
Knoxville	980
Memphis (U)	----
Memphis	399
Nashville	546
Oak Ridge	914
TEXAS	
Abilene	1738
Amarillo	3676
Austin	605
Brownsville	57
Corpus Christi	20
Dallas	512
Del Rio (U)	960
El Paso	3778
Fort Worth	576
Galveston (U)	----
Galveston	54
Houston (U)	138
Houston	62
Laredo	418
Lubbock	3241
Midland	2862
Port Arthur	34
San Angelo	1908
San Antonio	693
Victoria	117
Waco	578
Wichita Falls	1030
UTAH	
Milford	5097
Salt Lake City	4357
Wendover	4239
VERMONT	
Burlington	403
VIRGINIA	
Lynchburg	947
Norfolk	30
Richmond	164
Roanoke	1176
WASHINGTON	
Olympia	200
Seattle (U)	----
Seattle (Boeing)	----
Seattle-Tacoma	388
Spokane	1929
Stampede Pass (R)	3967
Tatoosh Island (R)	86
Walla Walla (U)	991
Yakima	1076
WEST INDIES	
San Juan, P. R. (U)	----
San Juan, P. R.	62
Swan Island	33
WEST VIRGINIA	
Charleston	989
Elkins	----
Huntington (U)	----
Parkersburg (U)	637
WISCONSIN	
Green Bay	617
La Crosse	672
Madison	974
Milwaukee	681
WYOMING	
Casper	5290
Cheyenne	6144
Lander	5352
Sheridan	3790

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, site.

These are the elevations of the barometer (in feet above mean sea level) to which station pressure values pertain in the "Climatological Data" table in the monthly publication CLIMATOLOGICAL DATA NATIONAL SUMMARY. When an elevation differs from the present station elevation this level was selected to permit comparison of data for a longer period of homogeneous record.

GENERAL SUMMARY OF TORNADOES, 1960

Compiled by L. V. Wolford
Climatology, U. S. Weather Bureau, Washington, D. C.

The monthly publications Storm Data, show a total of 618 tornadoes during 1960. They occurred on 172 days and caused the loss of 47 lives and 728 personal injuries. Also reported were 476 funnel clouds aloft, 66 waterspouts over water surfaces near the United States and 1 off Puerto Rico, and 19 dust devils. In only one previous year, 1957, has a greater number of tornadoes (864) been reported during the 45 years of record. During 1960, 63 of these storms moved over open country with no damage incurred, leaving a total of 555 damaging tornadoes. The number of days on which tornadoes occurred has never been exceeded during any year of record. Loss of life in 1960 was low; in only 4 previous years have fewer deaths been recorded and in 1 year the same number.

Fourteen tornadoes appear to have been associated with the passage of hurricanes or tropical storms. Four occurred in Texas and Arkansas during the passage of the tropical storm of June 24 to 26; four in the Carolinas as hurricane Donna moved over those States; and six in Florida and Alabama during hurricane Ethel. Losses from 10 of these tornadoes were relatively light, but on September 11, two storms associated with Donna caused 18 personal injuries in the Carolinas and extensive damage, particularly in South Carolina. Two tornadoes accompanying Ethel on September 15 and 16 resulted in injuries to 2 persons in Alabama and damage of over $50,000 each in Alabama and Florida.

Two of the year's tornadoes crossed state boundaries. On April 15, a storm began in eastern Kansas and moved into Missouri, causing injuries to 3 persons and damage of over $100,000. The other began in Arkansas and crossed to southern Missouri on May 6, with scattered damage to farm buildings along its 15- to 20-mile path.

Tornadoes occurred during each month of the year and in 40 states. Thirty-one of these storms were observed on May 5 for the greatest number on a single day during the year. May exceeded all other months in the number of tornadoes with 200 reported, followed by June with 123, then April with 70. Only one occurred in December for the least number of the year.

Of the 40 states in which tornadoes were observed, Oklahoma experienced the greatest total of 99, Texas followed with 77, then Kansas with 60; thus about 38 percent of the country's tornadoes occurred in these 3 states. Alaska, Connecticut, Delaware, Hawaii, Idaho, Nevada, Rhode Island, Utah, Washington, West Virginia, and the District of Columbia had no tornadoes in 1960.

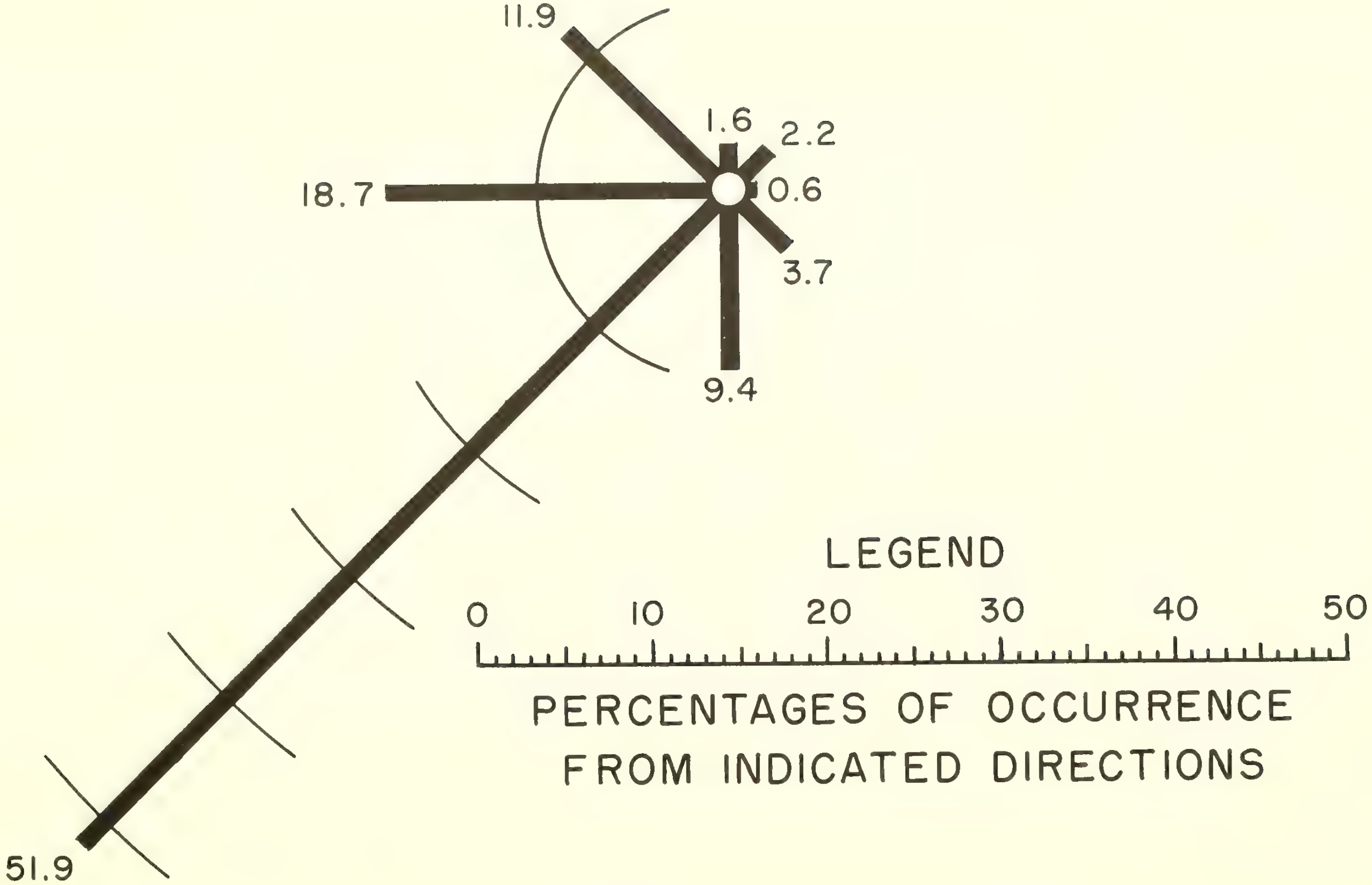
Of the 47 fatalities reported during the year, 32 occurred in Oklahoma on May 5. No lives were lost in January, February, March, September, November, and December. Deaths occurred in only 8 states: 35 in Oklahoma, 3 each in Colorado and Texas, 2 in Nebraska, and 1 each in Arkansas, Florida, Iowa, and Kansas.

The most disastrous tornado of the year from a monetary standpoint was the one which struck Schenectady, N. Y., on June 24, with property losses reported at $5 million, but with no loss of life and only one personal injury. However, the storm at Wilburton, Okla., on May 5, with damages estimated at $1-1/2 million, resulted in a death toll of 16 and 106 personal injuries. Another Oklahoma tornado, which moved from Shawnee to Tulsa on May 5, caused 5 deaths, 81 injuries, and losses placed between $500,000 and $5 million. Damages between $500,000 and $5 million resulted from each of 14 other tornadoes in the 7 states of Arkansas, Illinois, Iowa, Kansas, Kentucky, Oklahoma, and South Carolina, with a total loss of 3 lives and 227 injuries.

Nearly 85 percent of the tornadoes on which the time was given occurred between noon and midnight, with over 53 percent observed between the hours of 3 and 8 p. m., and greatest activity (nearly 13 percent) in the hour between 6 and 7 p. m. Only 2 storms, or 3/10 of 1 percent, struck between 7 and 8 a. m., for the hour of least frequency.

Data were obtained on the lengths of paths for about 70 percent of the 1960 tornadoes. Of these about 32 percent were designated as short or touching the ground briefly, 7 percent moved for distances of less than 1/2 mile, 16 percent from 1/2 mile to 1 mile, 31 percent from 1 to 10 miles, and 14 percent over 10 miles. The path of only one tornado exceeded 100 miles in length and only three others exceeded 50 miles. Paths averaged 7.6 miles long, with a median length of 3 miles. The longest path, 110 miles, occurred in Oklahoma on May 5. Another tornado in Oklahoma on the same date traveled for 85 miles. A tornado moved for 75 miles across four counties in northern North Carolina on March 30, and one path 55 miles long was reported in Illinois on the night of June 4 and 5. Data were available on the width of paths of 60 percent of the tornadoes. About one-third of these paths were narrow. The average width was about 201 yards, with a median width of 100 yards. A very narrow path of only 2 to 3 yards, the narrowest reported during the year, was observed in Texas on April 26.

Following the usual pattern, the prevailing direction of movement of the 1960 tornadoes was from the southwest to the northeast, with nearly 52 percent traveling in that direction. About 19 percent moved from the west and nearly 12 percent from the northwest. Thus, approximately 83 percent came from a general westerly direction. About 9 percent traveled from the south and 1-1/2 percent from the north, with the remaining 6-1/2 percent moving from easterly directions. See the Tornado Rose for 1960 accompanying this article.



TORNADO ROSE FOR THE UNITED STATES, GIVING THE PERCENTAGE OF TORNADOES MOVING FROM THE INDICATED DIRECTIONS DURING 1960.

TORNADO SUMMARY

Year 1960

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
ALA.													
Number	1		1		4		2		2	1			11
Days	1		1		3		1		2	1			9
Deaths	0		0		0		0		0	0			0
Injuries	0		0		1		0		2	0			3
ALASKA													
(None)													
ARIZ.													
Number						1			1				2
Days						1			1				2
Deaths						0			0				0
Injuries						0			0				0
ARK.													
Number	1	3		3	16	2	1	1			1		28
Days	1	2		1	6	2	1	1			1		15
Deaths	0	0		0	1	0	0	0			0		1
Injuries	0	12		3	39	0	0	0			0		54
CALIF.													
Number					1								1
Days					1								1
Deaths					0								0
Injuries					0								0
COLO.													
Number					4	6	3						13
Days					3	4	2						9
Deaths					0	2	1						3
Injuries					0	3	0						3
CONN.													
(None)													
DEL.													
(None)													
D. C.													
(None)													
FLA.													
Number		6	6	2	1	4	2		6	3	1		31
Days		3	5	2	1	4	2		3	2	1		23
Deaths		0	0	0	0	0	0		0	1	0		1
Injuries		2	6	0	0	2	0		0	0	0		10
GA.													
Number			1	1	2	1		1		1			7
Days			1	1	1	1		1		1			6
Deaths			0	0	0	0		0		0			0
Injuries			0	0	0	0		0		0			0
HAWAII													
(None)													
IDAHO													
(None)													
ILL.													
Number		3	2	7	11	15	1	1					40
Days		1	1	4	4	8	2	1					21
Deaths		0	0	0	0	0	0	0					0
Injuries		3	0	4	0	24	0	0					31
IND.													
Number			1	4	3	4			1				13
Days			1	2	3	3			1				10
Deaths			0	0	0	0			0				0
Injuries			0	1	0	2			0				3
IOWA													
Number			1	3	4	4	4	7	1		3		27
Days			1	1	3	3	3	4	1		2		18
Deaths			0	1	0	0	0	0	0		0		1
Injuries			0	5	0	0	0	0	0		0		5
KANS.													
Number			1	10	26	8	4	2		1	8		60
Days			1	6	9	3	3	2		1	1		26
Deaths			0	0	1	0	0	0		0	0		1
Injuries			0	14	91	0	0	0		0	4		109
KY.													
Number						1							1
Days						2							2
Deaths						0							0
Injuries						12							12
LA.													
Number	1	3	1	2		1			1				9
Days	1	2	1	1		1			1				7
Deaths	0	0	0	0		0			0				0
Injuries	0	8	0	4		0			0				12
MAINE													
Number								1					1
Days								1					1
Deaths								0					0
Injuries								0					0

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
MD.													
Number				1							1		2
Days				1							1		2
Deaths				0							0		0
Injuries				0							0		0
MASS.													
Number							1						1
Days							1						1
Deaths							0						0
Injuries							0						0
MICH.													
Number				1	1	3		1					6
Days				1	1	3		1					6
Deaths				0	0	0		0					0
Injuries				0	0	0		0					0
MINN.													
Number					1	2	2	2					7
Days					1	2	2	1					6
Deaths					0	0	0	0					0
Injuries					0	1	0	0					1
MISS.													
Number		2	1		2		1	1			1		8
Days		1	1		2		1	1			1		7
Deaths		0	0		0		0	0			0		0
Injuries		0	0		2		0	0			0		2
MO.													
Number	1	1	3	3	12	7					5	1	33
Days	1	1	1	2	5	5					1	1	17
Deaths	0	0	0	0	0	0					0	0	0
Injuries	0	0	1	4	0	0					3	0	8
MONT.													
Number						2	2						4
Days						2	2						4
Deaths						0	0						0
Injuries						0	0						0
NEBR.													
Number				1	10	24	1	7					43
Days				1	5	8	1	5					20
Deaths				0	0	1	0	1					2
Injuries				0	1	9	0	0					10
NEV.													
(None)													
N. H.													
Number						1	1						2
Days						1	1						2
Deaths						0	0						0
Injuries						0	2						2
N. J.													
Number				1		1	2				1		5
Days				1		1	2				1		5
Deaths				0		0	0				0		0
Injuries				0		0	6				0		6
N. MEX.													
Number				1		2	2		1				6
Days				1		2	2		1				6
Deaths				0		0	0		0				0
Injuries				0		34	0		0				34
N. Y.													
Number					1	2							3
Days					1	2							3
Deaths					0	0							0
Injuries					0	0							0
N. C.													
Number		4	1		2				2	1			10
Days		1	1		2				1	1			6
Deaths		0	0		0				0	0			0
Injuries		0	0		1				8	0			9
N. DAK.													
Number					1	1	10	7					19
Days					1	1	6	3					11
Deaths					0	0	0	0					0
Injuries					0	0	0	1					1
OHIO													
Number				1	2	3		1					7
Days				1	2	3		1					7
Deaths				0	0	0		0					0
Injuries				0	0	0		0					0
OKLA.													
Number	1	3	5	19	61	3	3	2	1		1		99
Days	1	2	2	4	11	3	3	2	1		1		30
Deaths	0	0	0	3	32	0	0	0	0		0		35
Injuries	0	0	0	73	241	0	0	0	0		0		314

TORNADO SUMMARY

Year 1960

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
OREG.													
Number			1										1
Days			1										1
Deaths			0										0
Injuries			0										0
PA.													
Number						2	1						3
Days						1	1						2
Deaths						0	0						0
Injuries						0	0						0
R. I. (None)													
S. C.													
Number			1						2				3
Days			1						1				2
Deaths			0						0				0
Injuries			0						10				10
S. DAK.													
Number					3	3	1	2					9
Days					3	1	1	2					7
Deaths					0	0	0	0					0
Injuries					0	0	0	1					1
TENN.													
Number			1					1					2
Days			1					1					2
Deaths			0					0					0
Injuries			1					0					1
TEX.													
Number	4	1		8	29	14	3	4	2	11	1		77
Days	2	1		4	10	8	[illegible]	4	2	3	1		37
Deaths	0	0		3	0	0	0	0	0	0	0		3
Injuries	4	3		35	13	5	0	2	0	20	0		82
UTAH (None)													
VT.													
Number						2							2
Days						1							1
Deaths						0							0
Injuries						0							0
VA.													
Number		2			1			1	1				5
Days		2			1			1	1				5
Deaths		0			0			0	0				0
Injuries		0			0			0	0				0
Wash. (None)													
W. Va. (None)													
WIS.													
Number				2	2	1		5			2		12
Days				2	1	1		4			1		9
Deaths				0	0	0		0			0		0
Injuries				0	0	0		0			1		1
WYO.													
Number				1	1	3	1	1					7
Days				1	1	3	1	1					7
Deaths				0	0	0	0	0					0
Injuries				1	1	0	2	0					4
Puerto Rico (None)													
TOTALS													
Number	9	28	27	71 *70	201 *200	123	48	48	21	18	25	1	620 *618
Days	†4	†10	†10	†20	† 26	†27	†22	†23	†13	†10	†6	†1	†172
Deaths	0	0	0	7	34	3	1	1	0	1	0	0	47
Injuries	4	28	8	144	390	92	10	4	20	20	8	0	728

* Corrected for boundary-crossing tornadoes.

† Tornado days for country as a whole.

NUMBER OF TORNADOES, TORNADO DAYS, AND RESULTING LOSSES BY YEARS 1916-60

Year	Number tornadoes	Number tornado days	Total deaths	Most deaths in a single tornado	Total property losses †	Number of tornadoes causing losses † in		
						category 5	category 6	catefory 7 & over
1916	90	36	150	30	6	7	1	0
1917	121	38	509	101	7	21	9	0
1918	81	45	135	36	7	20	5	0
1919	64	35	206	59	7	10	2	0
1920	87	50	498	87	7	14	10	0
1921	105	55	202	61	7	22	3	0
1922	108	64	135	16	7	27	5	0
1923	102	59	109	23	6	21	1	0
1924	130	57	376	85	7	26	11	1
1925	119	65	794	689	7	34	2	1
1926	111	57	144	23	6	28	0	0
1927	163	62	540	92	7	42	9	1
1928	203	79	92	14	7	40	7	0
1929	197	74	274	40	7	48	4	0
1930	192	72	179	41	7	38	6	0
1931	94	57	36	6	6	14	1	0
1932	151	67	394	37	7	23	1	1
1933	258	96	362	34	7	46	9	0
1934	147	77	47	6	6	10	3	0
1935	180	77	70	11	6	29	0	0
1936	151	71	552	216	7	17	5	1
1937	147	75	29	5	6	24	0	0
1938	213	76	183	32	7	29	6	0
1939	152	75	87	27	7	21	3	0
1940	124	62	65	18	7	13	2	0
1941	118	57	53	25	6	24	1	0
1942	167	66	384	65	7	42	10	0
1943	152	61	58	5	7	28	8	0
1944	169	68	275	100	7	50	9	0
1945	121	66	210	69	7	21	10	1
1946	106	65	78	15	7	29	7	0
1947	165	78	313	169	7	46	7	1
1948	183	68	140	33	7	62	11	2
1949	249	80	212	58	7	54	13	0
1950	199	88	70	18	7	47	9	0
1951	272	113	34	6	7	35	11	2
1952	236	98	230	57	7	53	19	0
1953	437	136	516	116	8	63	18	7
1954	549	159	35	6	7	63	8	1
1955	593	153	125	80	7	74	13	1
1956	532	155	83	25	7	83	24	1
1957	864	154	191	44	8	129	26	3
1958	565	166	66	19	7	70	8	1
1959	589	156	58	21	7	70	4	1
1960	618	172	47	16	7	65	11	1
Total	10,374	3,740	9,346	---	-	---	--	-
Avg.	230.5	83.1	207.7	---	-	---	--	-
Median	163	71	144	---	-	---	--	-

NOTE.--The above estimated losses are based on values at time of occurrence.

† Storm damages in categories:

5	$50,000 to $500,000	7	$5,000,000 to $50,000,000
6	$500,000 to $5,000,000	8	$50,000,000 and over.

This tabulation does not include funnel clouds that remained aloft or funnels on water surfaces only.

NUMBER OF FUNNEL CLOUDS ALOFT 1960

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Ala.					3	1	2			1			7
Alaska								1					1
Ariz.			1						1				2
Ark.		1			15	1							17
Calif.											2		2
Colo.							3						3
Conn.													0
Del.													0
D. C.													0
Fla.	1			1	2	7	4	3	8	5			31
Ga.				2		1	1	1					5
Hawaii													0
Idaho													0
Ill.					2	7	3						12
Ind.				1	13	3	1						18
Iowa					4	3		24					31
Kans.				11	15	14	8	1		1			50
Ky.					4	1							5
La.	1	1		2			3	3					10
Maine						2							2
Md.							1						1
Mass.													0
Mich.					2		1	1					4
Minn.					3	5	4	2					14
Miss.		1			2			2					5
Mo.				5		5	2				2		14
Mont.						1	2	1					4
Nebr.					2	13	2	7					24
Nev.													0
N. H.													0
N. J.													0
N. Mex.				1				1					2
N. Y.													0
N. C.													0
N. Dak.					2	2		1					5
Ohio					2	1		1	1				5
Okla.	2	1	2	8	44	7	4	1		2	1		72
Oreg.				1									1
Pa.													0
R. I.													0
S. C.							1	1					2
S. Dak.					1	3		6					10
Tenn.					2		1						3
Tex.				10	22	17	8	13	6	13	2	1	92
Utah													0
Vt.													0
Va.						1							1
Wash.													0
W. Va.													0
Wis.					3	1	3	6	2		1		16
Wyo.				1		1	1			1			4
W. Indies				1									1
Total	4	4	3	44	143	97	55	76	18	23	8	1	476

HAILSTORM LOSSES†

YEAR 1960

Section	January		February		March		April		May		June		July	
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops
Alabama					3				d 2		d 4	d 4		
Alaska														
Arizona														
Arkansas							4			h 3	4	3		
California								3						
Colorado									b s 4	b s 5	5	5	b d 5	b d [illegible]
Connecticut							3	3			d h 3	d 4		
Delaware														
District of Columbia														
Florida					b d 5	b d 5								
Georgia					3	3			d h 3	d h 4		b d h 4		b d 4
Hawaii									2	2				
Idaho														b 5
Illinois					U		D		D	D	d 6	d 6	b d h 2	b d 4
Indiana									1		b d h 2	b d 4		
Iowa					3		5		4	4	6	6	6	5
Kansas							5		b h 6	b h 6	d 5	d 6	b d h 4	b d 4
Kentucky									4	3		2		
Louisiana							5				4	4	4	[illegible]
Maine											5	5	d h 3	d 4
Maryland										D				
Massachusetts											d h 4	d 3		
Michigan												6		b d 6
Minnesota											5	6	b d 4	b d 6
Mississippi			4						5	4				
Missouri							5		2					
Montana											h 5	4	d 3	d 6
Nebraska									5	6	6	7	b d h 4	b d 6

HAILSTORM LOSSES†

Section	August		September		October		November		December		Crop season April–Sept.		Total		
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property and crops
Alabama											d 4	d 4	d 4	d 4	d 5
Alaska															
Arizona															
Arkansas											5	h 4	5	h 4	h 5
California			b d 3								b d 3	3	b d 3	3	b d 4
Colorado		b d h 4	b 4	b 4							b d s 6	b d h s 6	b d s 6	b d h s 6	b d h s 6
Connecticut	b d 3	b d h 3									b d h 4	b d h 4	b d h 4	b d h 4	b d h 4
Delaware															
District of Columbia															
Florida													b d 5	b d 5	b d 6
Georgia	b d 3	b d 4									b d h 4	b d h 5	b d h 4	b d h 5	b d h 5
Hawaii											2	2	2	2	
Idaho												b 5		b 5	b 5
Illinois	3	b d h 5	b d 4	b d 4			b 3				b d h 6	b d h 6	b d h 6	b d h 6	b d h 6
Indiana											b d h 2	b d 4	b d h 2	b d 4	b d h 4
Iowa	5	6	b h 3	b h 3							b h 7	b h 7	b h 7	b h 7	b h 7
Kansas	b d h 5				h 5						b d h 6	b d h 7	b d h 6	b d h 7	b d h 7
Kentucky	b d h 3	b d h 5		d h 3	b 3	b 3					b d h 4	b d h 5	b d h 4	b d h 5	b d h 5
Louisiana											5	4	5	4	5
Maine											d h 5	d 5	d h 5	d 5	d h 6
Maryland												D		D	D
Massachusetts											d h 4	d 3	d h 4	d 3	d h 4
Michigan		b d h 5	b d h 3	b d h 4			b d h 5				b d h 3	b d h 7	b d h 5	b d h 7	b d h 7
Minnesota	b h 3	b d 4		4							b d h 5	b d 7	b d h 5	b d 7	b d h 7
Mississippi											5	4	5	4	5
Missouri											5		5		5
Montana	b d 5	b d 6									b d h 6	b d 7	b d h 6	b d 7	b d h 7
Nebraska	d h 5	d h 6	4	5							b d h 6	b d h 7	b d h 6	b d h 7	b d h 7

HAILSTORM LOSSES†

YEAR 1960

Section	January		February		March		April		May		June		July	
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops
Nevada														
New Hampshire														
New Jersey														
New Mexico									4	5	5	5		5
New York												b d 5		
North Carolina									5	6	3	5		d 5
North Dakota										3		b 3	b 5	b 6
Ohio							4		3		5	5		
Oklahoma					b 5		6	5	6	1	5	b 5	b d h 4	b d 4
Oregon							1	4	2	3			3	5
Pennsylvania									5	5		b 3	4	5
Puerto Rico														
Rhode Island														
South Carolina						2			2	4			2	
South Dakota											b d h 4	b d 6	5	6
Tennessee														
Texas							d °6	d C	5	5	5	5	3	5
Utah												5		
Vermont														
U. S. Virgin Is.														
Virginia										5			D	D
Washington							4							
West Virginia									b d h °4		b 3	b 3		
Wisconsin											5		b d 4	b d 4
Wyoming										2	b 3	7		
Total			4		b d 6	b d 5	d 7	d 5	b d h s 7	b d h s 7	b d h 7	b d h 8	b d h 6	b d 7

HAILSTORM LOSSES†

Section	August		September		October		November		December		Crop season April—Sept.		Total		
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property and crops
Nevada															
New Hampshire		b d h 3										b d h 3		b d h 3	b d h 3
New Jersey															
New Mexico	d 2	d 4			4	5					d 5	d 6	d 5	d 6	d 6
New York												b d 5		b d 5	b d 5
North Carolina	b d h 3	b d h 5	b d h 2	b d h 3/ 5							b d h 5	b d h 3/ 6	b d h 5	b d h 3/ 6	b d h 6
North Dakota	d 4	d 6									b d 5	b d 7	b d 5	b d 7	b d 7
Ohio											5	5	5	5	6
Oklahoma	b d h 4				b d 5	b d 6	d 4				b d h 7	b d 6	b d h 7	b d 6	b d h 7
Oregon	2	3	3	b d h 3	2	2					4	b d h 5	4	b d h 5	b d h 5
Pennsylvania											5	b 6	5	b 6	b 6
Puerto Rico															
Rhode Island															
South Carolina	d 2	d 3			1						d 2	d 4	d 3	d 4	d 4
South Dakota	b d h 5	b d h 6	4	4							b d h 6	b d h 7	b d h 6	b d h 7	b d h 7
Tennessee		d 5		b 4	b d h 5						b d h	b d 5	b d h 5	b d 5	b d h 6
Texas	b d h 2	b d h 5	b D	b D	b d 6	b d 7					b d h 6	b d h 6	b d h 7	b d h 7	b d h 7
Utah				3								5		5	5
Vermont															
U. S. Virgin Is.															
Virginia	U	b d h U	b d h D	b d h D							b d h D	b d h 5	b d h D	b d h 5	b d h 5
Washington											4		4		4
West Virginia											b d h °4	b 3	b d h °4	b 3	b d h 4
Wisconsin			d 4								b d 5	b d 4	b d 5	b d 4	b d 5
Wyoming	4	4									b 4	7	b 4	7	b 7
Total	b d h 6	b d h 7	b d h 5	b d h 6	b d h 6	b d 7	b d h 5				b d h s 7	b d h s 8	b d h s 7	b d h s 8	b d h s 8

Includes crop damage.
U Undetermined.
C Crop damage.
D Occurred; estimates not available.
b With rain.
d With wind.
h With lightning.
s With snow.
3/ Hurricane Donna.

NOTE--The above table will be discontinued with current issue. Data can be obtained from the Storm Summary table in the monthly issue of the CLIMATOLOGICAL DATA NATIONAL SUMMARY.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000.

HAILSTORM LOSSES FOR PAST YEARS

Year	Property (exclusive † of crops)	Crops †	Total †	Year	Property (exclusive † of crops)	Crops †	Total †
1933	-	-	7	1947	6	8	8
1934	-	-	7	1948	7	8	8
1935	-	-	7	1949	7	7	7
1936	6	7	7	1950	7	7	7
1937	6	7	7	1951	7	7	8
1938	6	7	7	1952	7	7	7
1939	5	6	6	1953	7	7	7
1940	6	7	7	1954	7	8	8
1941	6	7	7	1955	7	7	8
1942	6	7	7	1956	7	8	8
1943	6	7	7	1957	7	8	8
1944	7	7	8	1958	7	8	8
1945	6	7	7	1959	6	7	7
1946	7	7	7	1960	7	8	8

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50	4	$5,000 to $50,000	7	$5,000,000 to $50,000,000
2	$50 to $500	5	$50,000 to $500,000	8	$50,000,000 to $500,000,000
3	$500 to $5,000	6	$500,000 to $5,000,000	9	$500,000,000 to $5,000,000,000.

NOTE.--The above estimated losses are based on values at time of occurrence.

WINDSTORM LOSSES †

(Windstorms other than tornadoes)

YEAR 1960

Section	January		February		March		April		May		June		July	
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops
Alabama			b 5		b 4						d 4		b d h 5	
Alaska							4							
Arizona	4										4		4	
Arkansas			d 4						5	3	d 3			
California			b 5		3		3		3	4	3		5	4
Colorado							5	(			4		b d h 4	b d 4
Connecticut	5		5		3						d 4	d 4	b h 4	
Delaware														
Florida			3		b 5				4		4		3	
Georgia			b s 5		b 4		h 3		d h 3		b h 4		b d h 5	b d 4
Hawaii														
Idaho									3				b 4	b 4
Illinois			D		U		5		h 4	D	b d h 6	6	b h 6	5
Indiana							5		b 4		d h 6	d 3	b 6	b 4
Iowa							6		4		6	6	5	5
Kansas							4	3	3		d 5		b d h 4	b d 4
Kentucky			4		4				5		h 5		b h 4	b 3
Louisiana			4				5	4	4		d 5		5	
Maine			s 6										b d h 4	
Maryland			s 5				4		4		d 4	C	4	C
Massachusetts	b 6		b s 6		5		3				b h [illegible]		b [illegible]	b 3
Michigan					4		5				6		b d h 6	b [illegible]
Minnesota											b 5	b 4	b d h [illegible]	[illegible]
Mississippi									5	1				
Missouri			4											
Montana							5		4				d 3	d 3

WINDSTORM LOSSES†

(Windstorms other than tornadoes)

YEAR 1960

Section	August		September		October		November		December		Crop season April—Sept		Total		
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property and crops
Alabama	h 3		4		4						b d h 5		b d h 6		b d h 6
Alaska					3/ 5						4		5		5
Arizona	b d h 5		b 5								b d h 6		b d h 6		b d h 6
Arkansas	b d h 5	b d h 5									b d h 6	b d h 5	b d h 6	b d h 5	b d h 6
California	4	4	b h 3		b s 5		d h 5		5		b h 5	5	b d h s 6	5	b d h s 6
Colorado	b d h 3	b d h 3	4				4				b d h 5	b d h 4	b d h 5	b d h 4	b d h 5
Connecticut	b h	b d h									b d h 5	b d h 4	b d h 6	b d h 4	b d h 6
Delaware	4	C									°4	C	°4		4
Florida	3		1/ 8	1/ 7							8	7	b 8	7	b 8
Georgia	b d 4	b d 4									b d h 5	b d 5	b d h s 6	b d 5	b d h s 6
Hawaii															
Idaho	g 5		h 5	h C			s 4				b g h 6	b h 4	b g h s 6	b h 4	b g h s 6
Illinois	b d h 5	b d h 5	b d h 5	b d h 3	4		b 4				b d h A7	b d h 6	b d h A7	b d h 6	b d h A7
Indiana	b h 4										b d h 7	b d 4	b d h 7	b d 4	b d h 7
Iowa	d 5	d 6	4	4	4	3					d 7	d 7	d 7	d 7	d 7
Kansas	b d h 5						5	3			b d h 6	b d 4	b d h 6	b d 4	b d h 6
Kentucky	h 4	h 4	d h 4	d h 3							b d h 6	b d h 4	b d h 6	b d h 4	b d h 6
Louisiana	4		5	5					6		d 6	5	d 6	5	d 6
Maine	4		6	5							b d h 6	5	b d h s 7	5	b d h s 7
Maryland	b h 4	b h C									b d h 5	b h C	b d h s 5	b h C	b d h s 5
Massachusetts	b d h 2		6	b d h s 5	3				3		b d h 6	b d h s 5	b d h s 7	b d h s 5	b d h s 7
Michigan	b h 6		b d h 6	b d h 4							b d h 7	b d h 4	b d h 7	b d h 4	b d h 7
Minnesota	b d h 5	b d h 4	b 5				3/ 5				b d h 6	b d h 5	b d h 6	b d h 5	b d h 6
Mississippi			5	5							6	5	6	5	6
Missouri													4		4
Montana	4		h 4	h 3	3						d h 5	d h 4	d h 5	d h 4	d h 5

WINDSTORM LOSSES†

(Windstorms other than tornadoes)

Section	January		February		March		April		May		June		July	
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops
Nebraska					4		4	4	d 5		b d h 6	b d 6	d 5	d 5
Nevada			5						3					
New Hampshire			s 5								b h 4		3	2
New Jersey			s 5		s 3									
New Mexico	4		5						4				3	
New York	b s 3				4		d 5				b d h 5		b h 5	
North Carolina					4				b d h 5	b d 4	b d h 4	b d 2	d h 5	d 5
North Dakota	3								3	3		3		d 5
Ohio									h 4		6	4	b 6	b 4
Oklahoma	b 4		g 5		b 4		6		b d 6		b d 5		b h 6	b d 4
Oregon	b 5	b 1	b 6	b 2	4	1	5	3	3	2	3	3	4	4
Pennsylvania			h s 5				3		3		5	3		
Puerto Rico														
Rhode Island	b 5												b 4	b 4
South Carolina	4		4		2				3		3		d 4	
South Dakota									4		b d h 5		4	4
Tennessee			3		5		b 4		4					
Texas	4		5				4		5		5	4	b 5	
Utah			5				4		3		4			
Vermont											b h 3		b h 4	
U. S. Virgin Is.														
Virginia					4				D	D			D	D
Washington	b 5		b 5		3		5							
West Virginia			s 4						b d h 3		b 3	2		
Wisconsin											4		b d 5	b d 5
Wyoming														
District of Columbia														
Total	b s 6	b 1	b d g h s 7	b 2	b s 6	1	b d h 7	5	b d h 6	b d 5	b d h 7	b d 7	b d h 7	b d 6

WINDSTORM LOSSES †

(Windstorms other than tornadoes)

YEAR 1960

Section	August		September		October		November		December		Crop season April–Sept		Total		
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property and crops
Nebraska	d h 5	d h 5					b s 4				b d h 6	b d h 6	b d h s 6	b d h 6	b d h s 7
Nevada											3		5		5
New Hampshire			5	5							b h 5	5	b h s 6	5	b h s 6
New Jersey	b h 3		6	6							b h 6	6	b h s 6	6	b h s 7
New Mexico	d 4						D				d 5		d 5		d 5
New York	b 3		°6	C							b d h 6	C	b d h s 6	C	b d h s 6
North Carolina	b d h 5	b d h 4	[2] 7	[2] 7							b d h [2] 7	b d h 7	b d h [2] 7	b d h 7	b d h 8
North Dakota	d 5		4								d 5	d 5	d 5	d 5	d 6
Ohio			4								b h 7	b 5	b h 7	b 5	b h 7
Oklahoma	b d h 5		4		4		4				b d h 7	b d 4	b d g h 7	b d 4	b d g h 7
Oregon	1	4	b d h 4	b d h 3	3	1	b 5	b 2			b d h 5	b d h 5	b d h 6	b d h 5	b d h 6
Pennsylvania							4				5	3	h s 6	3	h s 6
Puerto Rico															
Rhode Island	3				3						b 4	b 4	b 5	b 4	b 5
South Carolina	d 4		5	4	2						d 5	4	d 5	4	d 5
South Dakota	b d h 5	b d h 3									b d h 6	b d h 4	b d h 6	b d h 4	b d h 6
Tennessee					b d 4						b 5		b d 5		b d 5
Texas	b d 5		d 4		b d 5	b d 5					b d 6	4	b d 6	b d 5	b d 6
Utah											5		5		5
Vermont			4	5							b h 5	5	b h 5	5	b h 5
U. S. Virgin Is.															
Virginia	b h U	b h U	D	D							b h D	b h D	b h 4	b h D	b h 4
Washington			b 3		4		4				b 5		b 6		b 6
West Virginia											b d h 4	2	b d h s 4	2	b d h s 4
Wisconsin	b d 5	b d 5					b h s 5				b d 6	b d 6	b d h s 6	b d 6	b d h s 6
Wyoming	4						s 4				4		s 5		s 5
District of Columbia															
Total	b d g h 7	b d h 6	b d h [1]/[2] 8	b d h s [1] [2] 8	b d s [3] 6	b d 5	b d h s [3]/ 6	b 3	6		b d g h 8	b d h s 8	b d g h s [3] [2] [1]/ 8	b d h s [1] [2] 8	b d g h s [1] [2]/[3]/ 8

Includes crop damage.
A Additional occurred; estimates not available.
C Crop damage.
D Occurred; estimates not available.
U Undetermined.
b With rain.
d With hail.
g With dust.
h With lightning.
s With snow.
1/ Windstorm damage by Hurricanes Donna and Ethel.
2/ Hurricane Donna.
3/ Includes wave action.

NOTE--The above table will be discontinued with current issue. Data can be obtained from the Storm Summary table in the monthly issues of the CLIMATOLOGICAL DATA NATIONAL SUMMARY.

† Storm damages are placed in categories varying from 1 to 9 as follows
1 Less than $50
2 $50 to $500
3 $500 to $5 000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to 5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

WINDSTORM LOSSES PAST YEARS

(Windstorms other than tornadoes)

Year	Total loss of life	Total property loss *
1916	65	7
1917	25	6
1918	79	7
1919	344	7
1920	42	6
1921	65	7
1922	133	7
1923	68	7
1924	78	7
1925	88	7
1926	357	8
1927	64	7
1928	1,947	8
1929	46	7
1930	49	7
1931	17	7
1932	306	7
1933	156	8
1934	109	7
1935	461	7
1936	121	7
1937	43	7
1938	630	8
1939	60	6
1940	251	7
1941	43	7
1942	68	7
1943	61	7
1944	448	8
1945	85	7
1946	70	7
1947	117	8
1948	52	8
1949	102	8
1950	210	8
1951	289	8
1952	137	8
1953	118	8
1954	292	9
1955	301	8
1956	196	8
1957	553	8
1958	129	8
1959	145	7
1960	85	8
	Total 9,105	

* Storm damages are placed in categories varying from 1 to 9 as follows.
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000.

NOTE.--The above estimated losses are based on values at time of occurrence

NORTH ATLANTIC TROPICAL CYCLONES, 1960

George W. Cry
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Seven tropical cyclones developed in the North Atlantic region in 1960. Four of these reached hurricane force, but only one hurricane - Donna - was of sustained major intensity. Six of the tropical cyclones passed inland over the continent, and three of these also affected portions of the Antilles. Two of the hurricanes, Donna and Ethel, entered the United States and one, Abby, passed inland in British Honduras. Two of the hurricanes, Abby and Donna, also passed directly through portions of the lesser Antilles.

The annual number of tropical cyclones was slightly below the average for the past 20 years (9. 7 tropical cyclones, including 5. 7 hurricanes), but was very close to the long-term (75 years) average. The number of hurricanes and tropical storms affecting the United States was also near average. Storms were well distributed through most of the season. No storm developed in October, however, for the first time since 1937.

Fatalities in the United States attributed to tropical cyclones totaled 65 in 1960; 15 in Texas and Arkansas during the first storm of the season in June and 50 along the Eastern seaboard during Donna in September. Fatalities in other areas included 6 on St. Lucia during hurricane Abby in July, and 114 (most resulting from extreme floods in Puerto Rico) in the Antilles during hurricane Donna in September.

Total damages in the United States produced by tropical cyclones have been estimated at well over $400 million. Donna - the first major hurricane in Florida since 1950 - was the most destructive hurricane ever to strike that State, and one of the most damaging ever to affect the United States. Donna is believed to have carried hurricane winds into a more extensive coastal area than any other storm of record. Large sections of southern and central Florida, southern and eastern North Carolina, and the Long Island-extreme southeastern New England area were struck by the full force of hurricane winds. During the past 75 years no other tropical cyclones have struck all three areas with hurricane winds.

Tracks of the 1960 North Atlantic tropical cyclones are indicated on Figure 1. Brief summaries of each individual storm follow.

TROPICAL STORM (UNNAMED), JUNE 22-28

The initial tropical storm of the season developed in the Bay of Campeche on June 22. The first tropical cyclone of the season has developed in the Gulf of Mexico region almost one-third of the time during the past 60 years. The Gulf development occurred in June for the ninth time in 1960.

Ship reports indicated unsettled conditions, with numerous areas of showers and squalls in the southwestern Gulf on June 21 and 22. A routine aircraft reconnaissance into the area on the 22d found below-normal pressures, winds up to 35 knots in squalls, but no organized wind circulation. By the 23d, although reconnaissance again disclosed winds about the same and still no good organization, the stormy area had moved north-northwestward toward the southern Texas coast. During the night of June 23-24, the center of the poorly-developed tropical storm moved inland about 25 miles southwest of Corpus Christi. Winds were of storm intensity only for a short time along the coast; consequently, the storm was not named. Lowest pressures reported on the coast were 1002. 4 mb. at Alice and 1003. 7 mb. at Corpus Christi, both at 3 a. m., c. s. t., June 24.

Sustained winds of 35 to 50 m. p. h. were experienced briefly in the Corpus Christi-Rockport area. Gusts reached 50 to 60 m. p. h. along much of the immediate coast northeastward to near Galveston, but wind damages were insignificant, consisting mainly of signs and flimsy structures.

Tides were not unusually high, ranging up to 3. 5 feet above mean low water at Corpus Christi, and 1 to 1. 5 feet above normal around Galveston. On the night of the 23d-24th, 12- to 18-foot seas were reported off Mustang Island and Aransas Pass, beaching one shrimp boat and sinking another. Three fishing piers were destroyed at Bayside.

The storm drifted very slowly over the area west of Corpus Christi on June 24 and 25 and then moved northeastward through eastern Texas, Arkansas, Missouri and into Illinois on the 26-28th. Heavy to torrential rainfall extended over much of southeastern Texas, and moderate to locally heavy falls accompanied the remnants of the storm into the middle Mississippi Valley. Three- or four-day totals from Corpus Christi and San Antonio into East Texas were over 6 inches, with over 14 inches in sections of Harris County, over 16 inches in Refugio County, and 29. 76 inches in 3 days at Port Lavaca. Local totals of more than 9 inches were recorded near Little Rock, Ark.

Widespread flooding developed over the flat Texas coastal plain with damages from Harris County southwestward to Refugio County estimates at $3. 5 million. Overall damages have been extimated at $3. 6 million.

Several small tornadoes were reported within the circulation in Texas and Arkansas.

Fatalities, all by drowning, totaled 15, including 3 in the lost shrimp boat, 2 at Port Lavaca, 4 near Houston, 2 near San Marcos, and 1 in Jackson County, in Texas; and 3 in Jefferson County, Arkansas.

HURRICANE ABBY, JULY 9-16

The disturbance which developed into hurricane Abby was first noted as an easterly wave near 55°W between 10°N and 15°N on July 9. The first indications - showery weather with near 40-knot, east-southeast winds - came from a ship report at 5 a. m., A. s. t. Later reports - including 1007. 6 mb. sea level pressure and 45 knot east-northeast wind from the SS DEL ORO near 13. 8°N, 59. 7°W at 2 a. m., A. s. t., on the 10th, and significant 24-hour pressure falls at St. Lucia and Trinidad - indicated a strong easterly wave or a small closed circulation had developed. About 2-1/2 hours later gale winds, squalls, and a large pressure fall at Martinique presaged the approach of the storm center. The storm had become well organized during the night, and an eye was noted over the southern tip of St. Lucia at 8:15 a. m., A. s. t. By 10:30 a. m.,

A. s. t., aircraft reconnaissance had confirmed a forecast of rapid intensification to hurricane intensity with a report of estimated maximum winds of 70 knots, and an eye at 14°N, 61.4°W.

On the 11th and 12th the hurricane continued on a westerly course, with the center oscillating slowly between 14°N and 16°N. Some doubt was evident as to the intensity. From aircraft and ship reports, it was apparently small and rather poorly organized. Maximum winds were estimated near 80 knots near the center on the 11th, but by the 13th were estimated at 45 to 50 knots in squalls north of the center. On the 14th, as the storm approached Cape Gracias, Nicaragua, rapid intensification took place with winds again estimated by aircraft at near 70 knots. The hurricane maintained this strength in a small area surrounding the center as it moved westward through the southern Gulf of Honduras and passed inland over extreme southern British Honduras on the morning of the 15th.

St. Lucia and Martinique were the most seriously affected areas of the Windward Islands. Sustained winds reached 48 knots, with gusts to 55, at St. Lucia and 6.80 inches of rain fell in 24 hours. At Martinique winds were 36 knots, with gusts to 66, and 3 to 4 inches of rain were reported. Barbados and Dominica had sustained winds of only 20 knots with gusts around 35 knots. Destruction from wind, rain, and tide was the most severe in memory at St. Lucia and six fatalities occurred when a landslide buried a house. About one-third of the banana and cane crop was lost at Martinique. Considerable rain occurred from Honduras into most of southern Mexico and over the Gulf of Campeche as the remnants of Abby moved west-northwestward into southern Mexico and gradually dissipated. No loss of life was reported from Central America. Property damage was light in British Honduras, but damage was quite heavy to both cash and subsistence crops.

Overall damage was estimated at about $600,000.

TROPICAL STORM BRENDA, JULY 28-31

A weak circulation developed in a broad area of low pressure which covered the northeastern Gulf of Mexico for several days in late July and began moving northeastward on the night of July 27. It soon accelerated, moving into Florida near Cedar Keys and into southeastern Georgia. The wind pattern during this time was not typical of a tropical storm. Light winds only were reported within 50 to 100 miles of the low pressure center, while strong squalls extended outward for a considerable area from this distance. On the morning of July 29, after the low moved offshore, some intensification took place. Navy reconnaissance aircraft located an eye, surrounded closely by a zone of high winds - the typical tropical storm structure - off the South Carolina coast south-southwest of Myrtle Beach during the early afternoon. Brenda recrossed the coastline and moved rapidly northeastward over eastern sections of the Carolinas, southeastern Virginia, the central Delmarva Peninsula, and New Jersey during the night of the 29th and the morning of the 30th. The storm center passed through the New York City Metropolitan area around noon, and into southern New Hampshire by early evening. Cool air was entering the circulation and the storm, modified in structure to an extratropical low, passed through central Maine and then over eastern Quebec on the 31st.

Sustained wind speed in west-central Florida were near 40 m.p.h. during the night of the 28th and the morning of the 29th, with gusts up to 63 m.p.h. at Tampa. Gusts of 50 to 70 m.p.h. off the South Carolina coast during the afternoon and sustained winds of 58 m.p.h. at Cape Hatteras, N. C., during the evening were recorded on the 29th. Farther north, maximum winds of 35 to 55 m.p.h. were reported with gusts of 45 to 60 m.p.h. along portions of the middle Atlantic and southern New England coastlines. A peak gust of 65 m.p.h. at Cape Cod Canal in southeastern Massachusetts was the highest recorded in the northeast.

Wind damage in all sections was not severe and tides were not excessively high, both features due to the rapid movement of the storm and the path of the center, over or near land. While the storm was developing in the Gulf of Mexico, tides of 3 to 5 feet were reported along the west-central Florida coast, with waves in excess of 10 feet. This caused considerable beach erosion and the loss of many small craft.

Heavy rains, including a record 24-hour fall of 12.11 inches on the 28th-29th at Tampa WBAS, caused extensive flooding in that area. Rainfall along the storm track in north-central and northeastern Florida and in Georgia was light. Along the coastal plains of the Carolinas rainfall totals ranged from 3 to 8 inches. In Virginia, Maryland, and Delaware from 3 to 6 or 7 inches of moisture fell, caused some local flash flooding but had an overall positive effect in many areas in ending a prolonged period of serious precipitation deficiency.

Total rainfall at New York City (Battery) was 4.79 inches, a record July amount for 24 hours there. Sections of Long Island received up to 7-1/2 and 3 inches fell as far north as the Albany area. In New England, storm totals ranged from 4 inches in portions of western Connecticut to under 1/2 inch in southeastern Massachusetts and eastern Maine.

Total property damages in all areas were near $5 million. The bulk of this damage was in west-central Florida, mostly from flooding.

Two traffic deaths and one drowning were indirectly attributed to the heavy rains, but no deaths can be directly attributed to the storm.

HURRICANE CLEO, AUGUST 17-20

Cleo was the only tropical cyclone during 1960 to remain at sea throughout its existence. A broad area of squally weather was associated with a strong easterly wave extending across Hispaniola, Cuba, and the southeastern Bahamas on August 14-17. U. S. Navy aricraft reconnaissance located a circulation during the forenoon of August 18 about 350 miles northeast of Nassau, Bahamas. Highest winds were 60 knots in squalls close to the center. Cleo remained small in size but soon reached hurricane intensity and moved north-northeastward at an accelerating rate. The initial speed was near 12 knots, increased to 20 and later to near 30 knots on the 19th. Maximum winds were estimated at 80 knots near the center as the storm approached southern New England late on the 19th. The center was located about 280 miles east of Boston on the morning of the 20th. During the day the storm weakened rapidly and the direction of motion turned to the east-northeast. It dissipated on the 21st over the cold waters south of Newfoundland. There was no known loss of life or significant damage from Cleo, although it passed over the main shipping lanes.

HURRICANE DONNA, AUGUST 29-SEPTEMBER 13

Donna, the major hurricane of the season and the most destructive ever to strike Florida, was definitely located by aircraft reconnaissance on the afternoon of September 2 near 14°N, 49°W. Maximum surface winds were estimated at 120 knots, the central pressure at 973 mb., and a well-developed eye was noted. Scattered ship and aircraft reports in the remote and little-traveled southeastern Atlantic region for several days had indicated that a large area of unsettled weather had been moving westward from the African west coast. The first indications were high winds and unusually heavy rain squalls at Dakar, Senegal, which contributed to the crash of an airliner there on August 29, and heavy rain in the Cape Verde Islands on the 30th. An aircraft also reported what appeared to be a tropical disturbance near 10°N, 24°W on that day. No reports were received between August 30 and September 2. Extrapolation of Donna's track back to the African coast shows reasonable continuity with the disturbed weather. During the 2 days following discovery, Donna moved toward the west-northwest at about 17 knots. This path brought the storm through the northern Leeward Islands during the evening of September 4. The eye passed directly over Barbuda, St. Barthelemy, Sint Maarten, Anguilla, and a short distance south of Anegada. A slight decrease in intensity seemed to occur as the hurricane approached the Islands. The highest sustained wind was 110 knots, with gusts to 140, and the lowest recorded pressure was 952 mb., both at Sint Maarten, compared to reconnaissance reports of 140-knot winds and dropsonde pressures of 947 mb. earlier.

Wind and tide damage was heavy in sections of the Leewards. A large percentage of houses on Sint Maarten, Barbuda, and Anguilla were destroyed or severely damaged. Major damage also occurred on St. Barthelemy and at Sombrero and Virgin Gordo. Many inter-island schooners were lost or beached.

Five fatalities occurred on Anguilla and two persons were electrocuted on Antigua.

Continuing on a west-northwesterly track on September 5, the hurricane center came within about 35 miles to the northeast of St. Thomas, Virgin Islands, and some 85 miles north of San Juan, Puerto Rico. The region of maximum winds was quite small in the southern semicircle, and winds reached gust speeds of only 52 knots at St. Thomas, and a sustained speed of 33 knots at San Juan. The major feature of Donna in the Virgin Islands and Puerto Rico was not the usual wind or tide, although 3- to 5-feet above normal tides battered the northern coasts.

Extremely high-intensity rainfall developed over portions of the Virgin Islands and the eastern half of Puerto Rico on the night of September 5, a considerable distance from the center in the left rear quadrant of Donna. Up to 12 inches of rain fell in 3 to 4 hours, and 10-inch totals were reported over a 20 by 45 mile area in eastern Puerto Rico, with a few amounts over 15 inches at higher elevations. This deluge of water poured into the small rivers, with rises of 20 to 29 feet recorded, including 12 to 15 feet in 1 hour. At Humacao, where residents had returned to their homes in the river bed or on the flood plain despite issued flood warnings, 90 persons were drowned or unaccounted for. A landslide buried 8 persons near Patillas. Total fatalities were 108, and damage to property and crops nearly $8 million.

The path of the hurricane turned more toward the west late on September 6, the forward motion slowed to 10 knots (later to near 6 knots) and central pressures by dropsonde fell to 940 mb. on the 6th and to 944 mb. on the 7th, as Donna moved into the southeastern Bahamas.

Turks Island escaped the full force of the Hurricane as the center passed to the north. Highest winds there were only 45 to 50 knots. Rainfall was extremely heavy, however, totaling over 20 inches, and most of it fell within a 12-hour period.

Other islands were not so fortunate. The hurricane center passed over or near Mayaguana, Acklin, Fortune, and Ragged. At Mayaguana hurricane force winds were felt for 13 hours. The anemometer at Ragged Island failed at 130 knots, and the observer at Fortune Island estimated the maximum wind at 150 knots after the instruments blew away. Despite these severe winds no deaths and few injuries were reported as residents took shelter in the most substantial buildings available. Most islands in the western Bahamas were well north of the storm track, and no extensive damage was reported, although Andros Island had hurricane winds for several hours. Property damage in the Bahamas, not including military installations, totaled $600,000.

A progressively increasing turn toward the west-northwest began during the afternoon of the 8th so that the hurricane center paralleled the northeastern coast of Cuba on the 9th, bringing gales, heavy rains, and high tides to much of the island.

Gales began in the Florida Keys during the evening of September 9, and the hurricane center crossed the middle Keys between 1 and 3 a.m., e.s.t., on the 10th. Lulls were experienced from just east and north of Marathon Shores to Lignumvitae Key. The central pressure was approximately 930 mb., the minimum recorded in Donna. The lowest calibrated aneroid reading was 27.55 inches (933 mb.) at Conch Key. Measured wind gusts near the center were 135 to 150 m.p.h., and reliable estimates of sustained winds were near 140 m.p.h., with momentary gusts as high as 175 to 180 m.p.h. Storm tides ranged from about 6 feet above mean sea level at Key Largo to over 13 feet at Matecumbe Key, dropping off to about 6 feet on Long Key. Destruction was almost complete from wind and water over an area 40 miles to the northeast and 20 miles to the southwest of the track.

Donna began a more marked recurvature toward the northwest over the Bay of Florida and the center paralleled the coastline to Naples and Ft. Myers, then moved northward with gradually increasing forward speed during the afternoon and evening through central Florida and continued northeastward to the Atlantic coast just north of Daytona Beach about 4 a.m., e.s.t., September 11.

Instruments were blown away or stations abandoned at Flamingo, Everglades, and Naples, but observers estimated sustained winds of over 100 m.p.h., with gusts of

120 to 150 m.p.h. At Ft. Myers the maximum sustained wind was 92 m.p.h., gusts 121 m.p.h. Sustained winds remained near hurricane force near the center and gusts were estimated at near 100 m.p.h. just to the east of the track as it moved across the peninsula.

Peak tides were around 12 feet above mean sea level near Flamingo, and over 9 feet at Naples. Some local areas experienced water levels up to 11 feet above normal and levels 4 to 7 feet above normal extended as far north as Ft. Myers. Some places recorded below normal tides during the approach of the hurricane when offshore winds blew water away from the coast. Farther north on the west coast tides were progressively lower and tides on the east coast were not unusually high, except at the extreme lower end of Biscayne Bay where some flooding occurred.

Heavy to torrential rainfall - 5 to 10 inches over a wide area surrounding the hurricane path in central Florida and most of the southern peninsula - fell during Donna. Most of the total occurred over a 24-hour period. The heaviest rains apparently were in the extreme southwestern portions of Florida, but rain gages were lost or tipped over at stations from Ft. Myers southward. The rainfall was relatively light when compared to totals in some hurricanes or tropical storms in the past, but 6 to 10 inches of moisture had been recorded in many areas in the 3 prior weeks. Consequently, extensive flooding, both in rivers and of the surface type, reached record or near-record levels.

Damage to structures from wind and tide was extremely heavy on the Keys and the southwest coast northward to Punta Gorda. Over 10,000 structures suffered major damage or were destroyed and power and communications facilities were disrupted throughout central and southern Florida. Highways and roads also suffered extensive damage. Citrus and avocado trees were uprooted or blown over in unprotected locations in central and southern Florida, and denuded or split in many places. Little of the fruit blown off could be salvaged because of immaturity. Other agricultural damage, principally to truck crops, pastures, and livestock, resulted from the effects of long-duration flooding. Total damages have been estimated at about $300 million in Florida, exclusive of citrus. Although 30 percent of the grapefruit and 10 percent of the oranges were lost, subsequent price increases compensated for this.

Fatalities totaled only 13 in Florida, a remarkably low figure considering the intensity and destruction. The overall organization of the hurricane remained intact over Florida, although winds decreased and the central pressure increased from near 950 mb. at Ft. Myers to 970 mb. on the east coast. Some distortion and expansion of the central eye region began over Florida and continued to develop on the 11th as rapid re-intensification and acceleration occurred over the ocean off the Georgia and South Carolina coasts. Central pressure readings from dropsondes fell to 968 mb. about noon and 958 mb. about 8p.m. e.s.t. and maximum surface winds were estimated up to 115 m.p.h. as Donna accelerated northeastward. The forward speed approached 30 knots as the hurricane closed in on the North Carolina coast during the early evening of September 11.

During the afternoon several small tornadoes were reported in coastal South Carolina, with considerable damage and several injuries. The full effects of the hurricane missed most of Georgia and South Carolina. Rainfall ranged up to near 4 inches along the coast. Sustained winds along the coast were only 35 to 55 m.p.h., with gusts ranging up to near 70 m.p.h., except along the extreme northeastern South Carolina coast where sustained hurricane-force winds and gusts of 100 m.p.h. were recorded. Little damage was noted from winds or tides. Losses were estimated near $750,000, mainly from the tornadoes.

The eye, now a broad and diffuse area of calm or light variable winds, little or no rainfall, and thin or broken clouds ranging from 50 to 80 miles in diameter, moved inland again along the southwestern coast of North Carolina between 9 and 11 p.m., e.s.t., September 11. This area extended from extreme northeastern South Carolina to near Morehead City, N. C. It passed back into the ocean near the North Carolina-Virginia boundary around 5 a.m., e.s.t., September 12. Periods of lull ranging from 1/2 to 2 hours were reported from several points.

Minimum pressures in this region ranged from 958 to 967 mb., while maximum sustained winds ranged up to 83 m.p.h. at Elizabeth City, N. C., 80 m.p.h. at Cape Henry, Va., and 73 m.p.h. at Norfolk, Va. Gusts of 75 to 100 m.p.h., and locally slightly higher, were estimated along the southern coast and up to 90 m.p.h. along the storm track inland and in the Hampton Roads region. Tides were up to 8 feet above normal, with 15-foot waves, in places along the south coast and generally 3 to 6 feet in the outer banks and along the inland sounds, and locally over 9 feet in restricted areas in the Hampton Roads region.

Several tornadoes also occurred over inland sections of eastern North Carolina in the forward quadrants of the hurricane during the afternoon of the 11th. Rainfall ranged from 4 to 7 inches form the south-central North Carolina coast inland and for some distance to the west of the storm track. Amounts were smaller east of the track and inland over Virginia, ranging downward to near 3 inches in the Richmond, Va., and Washington, D. C., areas and less than 2 inches at Hatteras, N. C.

Some wind damage was experienced 50 miles or more inland and to the west of the storm track. Heavy damage was confined mainly to beach areas from Wilmington along the coast and inland sounds to Hampton Roads. Even in exposed locations selective damage was characteristic, ranging over short distances from only light roof or shingle damage to complete destruction. Sections of most fishing piers were lost to the seas along much of the coast. The extent of damage in the Morehead City-Beaufort and the Nags Head-Manteo regions was termed worse than in any of the other five severe tropical cyclones affecting North Carolina in the past decade. Some structural damage occurred in southeastern Virginia. Small craft and utility lines were also hard hit, and agricultural and forest damages were heavy, especially to the ripe corn crop. Overall losses were estimated at near $60 million. Eight fatalities occurred in North Carolina and three in Virginia.

The large central "eye" was a continuing feature as Donna resumed its rapid northeastward movement with a forward speed of 30 to 35 knots, a short distance offshore and parallel to the middle Atlantic coast during the morning of September 12. The western edge of the eye brushed the coast from the Delmarva Peninsula to New York City, with many places reporting varying periods of near calm or a slackening of wind and rain as the center moved past. The eye apparently became elongated on an east-west axis to a width of over 100 miles as it approached and crossed Long Island. Many places throughout the island had nearly simultaneous "eye" conditions between about 1:30 and 2:30 p.m., e.s.t., on September 12. By the time the center reached the southern New England coast about 1 hour later, a well-defined eye was not in evidence. Light winds, thin clouds, or patches of clear sky were noted by observers from central sections of Connecticut and Massachusetts eastward to Cape Cod, but these conditions were not reported from all locations over this region. The center of lowest pressure moved rapidly through eastern Connecticut, southeastern New Hampshire, and diagonally across Maine, passing west of Caribou about midnight. Gradual filling and weakening, together with the intrusion of colder air into the western quadrants of the storm, occurred over the New England area. Winds of hurricane force persisted in squalls over a small area near the center until the storm moved into Canada. The storm then continued rapidly northeastward into Labrador and Davis Strait on September 13 as a weakening frontal low.

Sustained winds of about hurricane force were reported along the immediate Maryland, Delaware and southern New Jersey coasts. One evidence that Donna was assuming extratropical characteristics was the observation of many of the maximum winds from the northwest at stations in this area, indicating that cooler, drier air was penetrating deep into the circulation. Residents at Ocean City, Md., where winds of 83 m.p.h. were recorded before the wind instruments became unserviceable, described Donna as the worst storm in the city's history. Several points on Long Island reported sustained winds of slightly over 100 m.p.h., with gusts of 125 to 130 m.p.h. over the eastern portions. The higher sustained winds in New England were in the coastal regions, ranging from near 100 m.p.h. at Block Island to 50-65 m.p.h. as far north as the Maine coast. Along the Rhode Island and southeastern Massachusetts coasts gusts were near 100 m.p.h. and over many scattered inland sections of southern New England 50 to 60 m.p.h. The large central area of the storm contributed to some peculiar distortions of wind and pressure extremes.

Minimum pressures along the middle Atlantic coast were in the 965 to 975 mb. range. The lowest reading in the northeast was 961 mb. at Brookhaven, L. I., (about the same as in North Carolina), with marks uniformly near 967-970 mb. over much of the southern New England coast. Tides were well above normal in the Chesapeake Bay and along the middle Atlantic and southern New England coasts. Levels ranged up to 8.9 feet above mean low water at Atlantic City, N. J., and a record 8.2 feet at the Battery in New York City. The southern shore of Long Island was also battered by similar tides. Tides 5 to 10 feet above normal along the southern New England coast came generally at the time of normal low tide, so that the destructive effect was lessened. Along the eastern New England coast, tides were not unusually high but persisted for about 2 hours after the time of normal high tide along the Maine coast.

Rainfall totals were generally from 3 to 6 inches for about 100 miles inland from the coastal sections of the Middle Atlantic States, and over New England near and west of the storm track from Rhode Island into southwestern Maine, with some local totals over 8 inches in the former area and 7 inches in New England. Downpours of 4 to more than 8 inches from the Catskills into the Lower Hudson Valley and south-central Long Island caused severe small stream flooding. Record-to near-record overflow occurred in sections of the Delmarva Peninsula and in the Catskills.

Property damage was heavy along the immediate shore, where winds and tides sank small craft, tore out boardwalks and docks, and damaged or destroyed cottages and buildings. Long Island and Rhode Island were especially hard-hit from tidal flooding and coastal erosion. Wind damage in inland sections was chiefly to utility lines, trees, windows, and roofs. Wind damage was mainly to the east of the storm track in New England.

Agricultural losses were heavy in many sections, particularily to the apple crop from Maryland through New Jersey and New York to New England. Drop ranged as high as one-third of the crop in New Jersey and New York. Corn, soybeans, grass, and other crops suffered damage in varying degree.

Two fatalities directly or indirectly attributed to Donna occurred in Maryland, one in Pennsylvania, and nine in New Jersey. Three direct fatalities occurred in New York and three in Massachusetts, while six indirect deaths were reported in Massachusetts, and one each in New Hampshire and Vermont.

HURRICANE ETHEL, SEPTEMBER 14-17

Hurricane Ethel developed rapidly in the central Gulf of Mexico early on September 14. The position and intensity of the storm were established by the Marine Automatic Meteorological observing Station (MAMOS) being tested for the U. S. Navy at 25.0°N., 90.0°W, proving the utility and value of such stations.

The 9:30 a.m., c.s.t., MAMOS observation, monitored at Burrwood, La., indicated a 55-knot, east-northeast wind and pressure 987 mb., a fall of 20 mb. in 3 hours. The hurricane moved northward and continued to intensify rapidly during the day. A central pressure of 972 mb. and winds of 140 knots were reported from reconnaissance aircraft during the afternoon. This violence was short-lived, however, and during the night of September 14-15 as cooler and drier air entered the circulation, the hurricane winds dropped sharply. At 6 a.m., c.s.t. September 15, the center was located just east of the Louisiana Delta, about 80 miles south-southwest of Mobile, Ala. The center reached the coast near Biloxi, Miss., about 5 p.m., c.s.t., with the lowest pressure on land 981.4 mb. at Keesler Air Force Base. The storm continued to weaken as it moved northward through eastern Mississippi. Remnants of the storm passed through west-central Tennessee on the morning of September 17.

The only section of the coast which was touched by winds of hurricane force was the eastern Louisiana Delta. The highest sustained wind was 90 m.p.h., with gusts to 105 at Venice, La. at 4:15 a.m., c.s.t. on the 15th. Burrwood, La., just to the west of the storm track, had sustained winds of 52 m.p.h., with gusts to 69. Strong winds extended over a larger area in the eastern half of the storm. Winds at Gulfport, Miss., were estimated at 60 m.p.h., gusts to 70; Ft. Morgan, Ala., measured 60 m.p.h., with gusts to 70; and Ft. Walton Beach, Fla., recorded 43 m.p.h.

Rainfall was spotty and generally heavier east of the storm center. Amounts in coastal areas ranged from near 2 inches in southeastern Louisiana to more than 7 inches in southern Alabama and extreme western Florida. Inland, local amounts of 4 to over 6 inches were recorded in Alabama; 2 to 4 inches in Mississippi; and 2 to 3 1/2 inches in middle Tennessee and southern Kentucky. The moisture was welcome and beneficial in many areas where subnormal precipitation had been the rule for several weeks.

Several tornadoes, waterspouts, and funnel clouds were observed in the right front quadrant of Ethel: on the 15th in Florida from the Panama City area westward to Pensacola, and on the 16th in interior Alabama. Some damage was reported at West Bay, Springfield, Sumatra, and near Milton, Fla.

Tides ranged generally from 2 to 3 feet above mean sea level around Burrwood to 4 to 5 feet along most of the Alabama and Mississippi coast, and 3 to 4 feet in northwestern Florida.

Most damage, from tides, heavy rains, and wind, was confined to the coastal areas. Damages totaled approximately $450,000 to property and $610,000 to crops. There were no injuries or fatalities reported.

TROPICAL STORM FLORENCE, SEPTEMBER 17-26

An extensive shower area was present in an easterly wave northeast of the Leeward Islands on September 16. By the morning of the 17th there were some indications in the northeastern Antilles that a closed circulation had formed. Reports from shipping on the evening of the 17th and aircraft reconnaissance located a broad, ill-defined center moving westward along parallel 21°N. with maximum winds near 40 m.p.h., and squalls near the center of 50 to 55 m.p.h. The storm moved through the southeastern Bahamas on the 18th, gradually weakening so that by the 19th only a weak circulation remained. These remnants drifted westward to the western end of Cuba and became nearly stationary until the evening of the 22d when the Low began moving northeastward toward the southwestern Florida coast. Squalls and showers were widespread between Cuba and the Bahamas during these days.

The weak Low moved across southern Florida on the 23d-24th with squally winds up to 35 m.p.h. at most places. Gusts to 52 m.p.h. were reported at Vero beach in a squall.

Heavy rainfall, 3 to 6 inches in many localities near the storm track, with a few 8 to 12 inch totals, augmented existing flooding in southeastern Florida and caused some flooding in areas missed by heavy rains in Donna. The Low was blocked by a large high pressure system to the north and drifted into the eastern Gulf, finally passing inland in the Pensacola area on the morning of the 26th with winds under 25 m.p.h. It dissipated over Mississippi later in the day, leaving light to moderate rainfall from southern Mississippi to southern Georgia and northern Florida.

Florence was never a well-developed tropical storm and no damage of consequence, except the prolongation of local flooding in Florida, was reported. Rainfall in the east Gulf States was beneficial to crops. No injuries or fatalities were reported.

TROPICAL CYCLONE DATA

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Time	Wind				Tide * (feet)	Rainfall (inches)	Remarks
			Fastest Mile	Time	Gusts	Time			
FLORIDA									
Daytona Beach WBAS	28.73	0445-11	ESE 58	0300	ESE 86	0342	2	4.58	Record low pressure. Tides ocean front and Halifax River. Center of eye estimated about 15 miles to west at 0345. Gust FAA tower ESE 99 0342.
Ft. Myers	28.08	1427-10	NE 92[1]	1331	121	1331	Est. 4-7	4.95	Eye 1420-1531. Record low pressure.
Jacksonville WBAS	29.20	0820-11	NE 46	0554	67	0715	1.4-2.9	4.43	Damage mostly billboards, poles, wires, and trees. Tides on beaches.
Key West WBAS	29.28	0330-10	NW 65	0410	NW 70	0440	3	1.57	
Lakeland WBO	28.60	2320-10	NE 68	2135	est 90			6.61	
Miami DMO	29.32	0530-10	E 55	0457	82	0331	4.3 MLW	7.01	Damage light, trees, signs, some windows.
Miami WBAS	29.34	0538-10	ESE 63[1]	0457	80			8.67	Gust FAA tower 84 kt. 0815.
Orlando WBAS	28.66	0236-11	ESE 46[1]		69			4.47	Calm reported in western environs of city.
Tampa WBAS	29.10	2235-10	N 62[1]	2140	N 75	2120		3.60	
West Palm Beach WBAS	29.52	1700-10	ESE 46	0800	63		1.0	1.53	Minor damage.
GEORGIA									
Savannah WBAS	29.37	1400-11	N 40	1500				2.64	
SOUTH CAROLINA									
Charleston WBAS	29.23	1700-11	NNW 39[1]	1717	NW 52	1706	7.6 MLW	2.98	Tornado across Charleston about 1355 to 1410 from east to west. Ten injuries. Damage near $250,00.
Charleston WBO	29.08	1645-11	NW 57	1720				4.24	
Florence WBAS	29.30		NNW 28[1]		NNW 48	1928		3.64	
NORTH CAROLINA									
Cape Hatteras WBO	28.76	0310-12	S 72	0231	S 94	0230	3-4	1.74	Tides were low.
Raleigh-Durham WBAS	29.34	0200-12	N 29	2300 -11	N 34	2300-11		1.75	
Wilmington WBAS	28.41	2150-11	NW 53[1]	2359	WNW 97	2355	6-8	6.26	Record low pressure.
VIRGINIA									
Cape Henry WBO	28.61	0530-12	NW 80	0708	WNW 91	0714	3-4 MLW	4.48	Calm 0515-0547.
Norfolk WBAS	28.65	0505-12	W 73	0646	NW 75	0647		4.31	
Richmond WBAS	29.25		NW 26	0526	46	1031		3.12	
Washington National Airport	29.27	0915-12	NW 34	1156	39			2.29	
MARYLAND									
Baltimore WBAS	29.24	1001-12	W 33		WNW 37	0856		4.92	
DELAWARE									
Dover AFB	28.85	0930-12	NNW 39	1017	NNW 65	1017		5.30	
Wilmington WBAS	29.05	1019-12	N 37[1]	1018	N 51	1018		5.62	
PENNSYLVANIA									
Philadelphia WBAS	28.91	1046-12	W 49		59			5.43	
NEW JERSEY									
Atlantic City WBAS	28.60	1055-12	NW 60[1]	1238	WNW 83		8.9 MLW	3.19	
Atlantic City State Marina	28.38	1220-12	WNW 58[1]		77			2.05	
Newark WBAS	28.73	1335-12	NE 51[1]	1108	NE 67	1223		2.48	Pressure is record minimum (1945-1960) and maximum wind is record for September (1946-1960).
Trenton WBO	29.00	1140-12	NW 56	1443				3.64	Wind is record for September.
NEW YORK									
New York City WBO	28.65	1400-12	NE 61	1326	NE 82	1326	8.2 MSL	4.70	Highest tide in many years.
New York City La Guardia	28.64		NE 70		93	1200		3.70	
Albany	29.09	1658-12	N 37	1431	52			4.92	
CONNECTICUT									
Hartford WBAS	28.68	1558-12	NE 43	1455	NE 58	1458		5.15	
New Haven	28.55	1500-12	E 35	1400	E 53 WNW 53	1400 1700	11.0 MSL	5.26	
RHODE ISLAND									
Block Island WBO	28.58	1530-12	S 95[1]	1615	S 130	1615		1.49	
Providence WBAS	28.66	1455-12	S 58[1]	1524	S 81	1524		2.22	
MASSACHUSETTS									
Blue Hill Observatory	28.52	1746-12	SSF 92	1632	SSE 140	1637		2.79	3d lowest pressure, 2d fastest mile, 2d highest gust of a 76-year record. Extreme gust aided by a steep southern slope which increases the wind velocity.
Boston WBAS	28.64	1805-12	S 57	1645	S 79	1645		2.95	
Nantucket	29.05	1642-12	S 56	1634	73	1640 & 1906	5.3 MLW	0.14	
Worcester	28.60	1730-12	NNE 30	1258	NE 47			5.31	Calm from about 1645 to 1815.
NEW HAMPSHIRE									
Concord	28.72	1900-12	E 42	1537	51	1715		5.40	
MAINE									
Caribou	28.88	0058-13	WSW 32[1]	0420	53	2359 -12		1.15	
Portland	28.75		SE 62	1913	SE 76	1913			

1 One-minute wind speed. * Tides in feet above normal, except where indicated. All times are Eastern Standard Time.

TROPICAL CYCLONE DATA

HURRICANE DONNA

August 29 September 13, 1960

Station	Sea Level Pressure (inches)	Maximum Winds M.P.H.	Gusts M.P.H.	Tide	Rain-fall	Remarks
WEST INDIES						
Barbuda, W.I.F.		NW 100		5	1.14	Damage $450,000. Severe property damage; 1 injury. Strong wind from N at 1000 A.s.t., very strong from NW at 1600 A.s.t., lull about 1700 for 15-20 minutes. Strong wind from SW 1800-2000 A.s.t. Destroyed: 3 boats, 33 houses. Tide in feet.
Sint Maarten, N.A.	28.11	SW 127	161	2	5.69	Damage $1.5 million. Eye hit, 70% houses destroyed or severely damaged in French and Dutch areas. All power and telephone lines down. No injuries. Evacuated from low-lying areas. Much damage to roads and bridges to airport. At Grande Anse, all houses destroyed except one. Phillipsburg inundated. Tide in meters.
Anguilla, W.I.F.						In eye 35-45 minutes, wind backed NE-N-NW-W over southern part of island and veered NE to SE over northern part where highest velocities were experienced. Damage $1.3 million. Five deaths, 17 severe injuries, 200 injured. Deaths due to flying metal blown from roofs and buildings. Sea water and spray killed 80 percent of agriculture. Houses destroyed, 374; badly damaged, 371; slightly damaged, 280. Schooners sunk, 13; beached, 1.
Antigua		60	69			Center estimated to have passed 30 miles to the north. Slight damage. Two deaths due to fallen electric lines.
La Desirade, F.A.	29.76	SSW 64				Slight damage.
St. Barthelemy, F.A. (Gustavia)	28.94	NNE 78 (est.)	102 (est.)			Barometer doubtful and winds estimated due to malfunction of instruments due to damage. Damage $159,200, all telephones and powerlines destroyed; houses unroofed, 20; severely damaged, 6; destroyed, 2; 1 hanger and 1 aircraft depot destroyed; cows and sheep killed; plantations suffered major damage; schooners destroyed or sunk, 4; blown ashore, 1. 4 injuries.
St. Kitts, W.I.F.		SSW 50	S 70			Slight damage.
Sombrero, W.I.F.						Severe damage to lighthouse being constructed.
Virgin Gordo, Brit. V.I.						Heavy damage to property, agriculture, and livestock. Schooners sunk, 3; blown ashore, 1.
Anegada, Brit. V.I.						Hurricane tides completely covered island. Severe damage to property; half of livestock killed, many homes destroyed; schooner sunk; 40 injuries.
Tortola, Brit. V.I.						No significant property damage.
St. Thomas, U.S. V.I.	29.61	WSW 52	WSW 60		5.58	Minor damage, 3 houses unroofed; 2 houses total loss; powerlines damaged.
St. Johns, U.S. V.I.	29.55	W 50	W 60		3.79	Minor damage.
St. Croix, U.S. V.I.	29.74	W 35	W 53		1.10	Minor damage.
San Juan WBAS	29.75	NW 38	W 42	4	2.22	Puerto Rico: Damages near $7 million to agriculture, livestock, roads, slum houses, and sugar. Highest floods on record in eastern sections of island. 107 persons killed or missing in floods and landslides. Tide in feet.
San Juan WBO	29.74	WNW 32	WNW 42		2.82	
Cape San Juan Churn CGLS	29.59	38	NW 50	3-4	6.00	Over 12 inches of rain at Signal Corps Station nearby. Tide in feet.
Roosevelt Roads NAS		SSW 36	50		8.76	Unconfirmed tornadic winds at 0130 a.s.t., 6 Sept., gave gusts up to 76 m.p.h., at the control tower and severely damaged it. Overall damage slight.
San Juan NAS & NOB	29.74	SSW 16	34			
Hato Rey Churn	29.74	NW 31	NNW 50		2.73	
El Yunque		36	S 61		8.50	Elevation 3476 feet.
Turks and Caicos						Damage $288,000.

TROPICAL CYCLONE DATA

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Time	Maximum Winds M.P.H.	Time	Gusts	Time	Tide* (feet)	Rainfall (inches)	Remarks
FLORIDA									
Alexander Springs			75					4.17	Lull one hour 0400-0500-11. Sky clear.
American Shoals L.S.			NW 110						
Avon Park			100-125	2100-10				6.50	Citrus damage. 2 heart attacks on 11th.
Babson Park								5.35	Lull 1200-10. Citrus damage very heavy.
Bartow			E 85		110				
Bartow A.F.B.			80					6.75	Lull 2200-2300-10.
Belle Glade Ex. Sta.	29.35	1215-10	52	1520	60	1507		4.62	Minor damage.
Blitho								5.05	Lull 0130-11. Minor damage.
Bradenton	29.01	2045-10						4.20	Tide below normal about 1800-10.
Bunnell			SE 85-90	0300-0500-11					Calm lasted 1-1 1/2 hours beginning about 0600-11.
Bushnell								5.33	Some lull around 0230-11.
Captavia and Sanibel Is.	28.68	1530-10	NW 130	1530-10				5.36	Tide about 4 1/2 feet MLW about 1600. East end of Sanibel Island partly flooded. Gales 20 hours.
Cedar Key	29.62	1600-10	N 10						
Carysfort Reef L.S.	29.29		120						
Clermont (Citrus Twr.)	28.50	0130-11			97				Lull 0155-0215-11.
Clermont								5.55	Lull 0130-0230-11. Sky cleared somewhat.
Conch Key	27.55								Lowest observed pressure by calibrated aneroid barometer during Donna.
Clearwater	29.20	2200-10	NNE 50	2100-10	60			4.3	
Clewiston (AF) #2	29.18	1600-10	68	1520-25	84	1430		3.24	Gales 17 hours.
Crescent City								3.58	Wind strong from north after eye passed 0510-0600-11.
Daytona Beach 5 1/2 N	28.6								Calm for 50 minutes beginning at 0445-11.
Deland			90					4.74	Wind ceased, stars shining 0330-0345-11.
DeLeon Springs			ESE 60-70					5 1/4	Clear sky, no wind, no rain for 30-60 minutes starting about 0430-11.
Duck Key	27.68	0145-10							In eye 1 hour 20 minutes at 0105-0225-10.
Egmont Key	29.28	2000-10	N 52-58	1900	69	1900			
Everglades	28.13	0915-10	NE 150		144m 175e		10.5 MLW		Gales 13 hours. No calm, but decrease about 0930 and sky brightened as wind shifted NE-SE-SW. Instruments blown away. High tide about 1430. Tide 1.0 feet below normal low at 0930.
Everglades 40-Mile Bend	29.05	0805	SSE 48						
Flamingo Churn	27.90	0345-10	70	0045-10	86		12.0 MLW		Instruments blown away before strongest wind.
Flagler Beach									Calm began 0515-11, sky clear, moon visible, lasted nearly 2 hours. Last 80 feet of pier destroyed.
Ft. Green								7.80	Lull 2100-10. Roof damage to almost all buildings.
Ft. Lauderdale	29.51	1700-10	60	1630-9					
Ft. Meade									Eye over city between 2130-2300-10.
Ft. Meade 4 1/2 E	28.60	2235-10		90-100	150				
Ft. Myers Beach									Sun broke through in eye.
Ft. Pierce	29.35	2000-10	SSE 40	1900	78		4 MLW	1.63	Tide 1300-10.
Grassy Key Churn									In eye 1 hour 20 minutes.
Hillsboro Inlet L.S.	29.53	1500-10	SW 73	0614-10					
Homestead A.F.B.	29.17	0436-10	ESE 60	0436	89			12.17	
Inglis	29.56	1500-10	NNE 10						
Isleworth	28.48	0145-11	65	0130	85			6.83	
Juniper Inlet L.S.	29.43	1800-10							
La Belle								3.90	Slight decrease and shift in wind velocity from NE to SE 1500-1530-10.
Lake Alfred								8.5	Lull and wind shift NE to SW about 2340-10 to 0030-11.
Lake Placid	28.99	1900-10						4.28	
Leesburg WARN	28.88	0130-11	NE 62	0130	96				
Land O Lakes		2300-10	65					4.43	
Lignum Vitae Key	27.85				155				Lull 20 minutes.
Lisbon								4.59	Lull 0240-0330-11.
Marathon Shores Churn	27.98		120+					12.10	Eye just to north at 0200-0230-10, tide approximately 6 feet over U.S. 1. Anemometer at end of range.
Melbourne FAA	29.26	0200-11	S 58	0056					
McCoy A.F.B.	28.71	0240-11	55	0120-0145	73	0032		3.80	
McDill A.F.B.	29.09	2200-10	NW 50	1700	75	1700		4.36	
Mirror Lake (St. Petersburg)	29.15	2030-10	N 40-50		N65			3.43	
Moore Haven Lock 1	29.11	1600-10	E &ESE 79	1500 & 1600-10				4.08	
Mountain Lake Park								6.14	Lull from 2315-2330-10.
Myakha State Park								6.59	Lull 1845-10.
New Smyrna Beach L.S.	28.84	0430-11	SE 66	0400					
Naples Churn	28.04	1220-10			100*	0930	10.2 MLW		Tide surveyed, 3-4 feet of water in most of City. Eye from 1200-1300. *Highest measured gust. Station abandoned.

TROPICAL CYCLONE DATA

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Time	Maximum Winds M.P.H.	Time	Gusts	Time	Tide* (feet)	Rainfall (inches)	Remarks
Nittaw								5.32	Lull 0500-11.
Osprey		2115-10							[illegible] 2135.
Ocean Ridge Churn			60-70	0845-0900-10					
Orange City									Light areas to west during 45 minute calm just before 0400-11.
Odessa			70					2.95	
Parrish					120			8 1/2	Lull 2115-10.
Pinellas Park			42	0000-11	8[illegible]			[illegible]	
Plant City				2300-10				7.45	
Punta Gorda	28.18	1600-10	NNE 130	1500					Eye overhead at 1700. Wind equipment out after 1500.
Ruskin	29.07	2115-2200-10	87					5.7	
Sarasota	29.02	1900-10	WNW 60-70		95				
Sanford Navy	28.73	0258-11	SSE 53		67			3.73	Apparent eye 5 miles NW. Gust 99 mph in tower.
St. Leo	29.00	0200-11						6.65	
Sombrero Key L.S.	28.44		NW 1[illegible]	0130-10	150				Wind is fastest mile.
Stuart Radio WSTV	29.46	1800-10	ESE 60	0900			1		Tide above normal in St. Lucie River about 4 miles west of inlet.
Stuart Sewalls Point	29.52	1300-10	35		60		2.5	1.38	Tide 2.6 at Lueder Dock at 1030-10.
Tarpon Springs	29.32	0100-11	NNE 50-70	0100				2.60	
Tavernier	28.80		120				13.7		Wind instrument at maximum reading for 4 hours.
Treasure Island	29.00	2200-10 0000-11	NW 45-50	2300	[illegible]5	2300			
Tampa (West Shore)			55		75			2.20	
Venice	28.97	1900-10	NNW 60-80	2100	98	2100			
Wauchula	28.40	2100-10	100-125	2100-10	140			7.4	Possible small tornado just E. of center.
Winter Garden	28.58	0220-11						6.2	Calm 0150-0227-11.
Winter Haven								7.20	Lull 0100-0140-11. Wind shifted E. to W.
SOUTH CAROLINA									
Sullivans Island Churn	29.05	1645-11	N 40	1645	N 70	1645		4.29	
McClellanville Churn	28.95	1700-11	WNW 45	1900	WNW 70	1900		4.75	
Georgetown Churn	28.96	1600-1700-11	40	1830	70	1830	5.3 MLW	5.50	
Ocean Beach Drive Churn	28 50				NW 100	2000-2030		11.00	
NORTH CAROLINA									
New Bern FAA	28.46	0100-12	WNW 58	0320-12	WNW 105	0320		5.75	Calm 0100-0145-12. Wind shift SE to WNW. Moon visible thru breaks in overcast.
Elizabeth City	28.44	0400-12	SE 83	0100-12				2.73	Calm 0400-0500, wind shift SE to NW, sky remained overcast.
Jacksonville, USMCAF	28.38	2350-11	NW 48	0100-12	WNW 87	0107		7.21	No complete calm but definite slackening from 2300-11 to 0030-12, wind shift ESE to NW and West, large oval opening nearly 1/10 sky coverage. Moon and stars clearly visible.
Cherry Point USMCAS	28.40	0040-12	W 58	0311-12	ESE 77 W 77	2310 0311		5.42	Wind slackened 0000-0130, wind shift from E to S to W.
Morehead City	28.55	0030-12			ESE 90	0000	4 1/2 to 5		
Holden Beach	28.52	2000-11			80		4-5		In eye 30 minutes. Station evacuated.
Oak Island	28.50	2100-11			90	2000			In eye 1 hour. Station evacuated.
Swansboro		2120-11			85-90	2120	8		Evacuated
New Topsail Beach	28.42	2220-11			100	2040	7 1/2	5.00	Waves 15 feet high.
Sneads Ferry	28.38	2200-11			100		5-6		In eye 1 hour 30 minutes.
Washington	28.48	0200-12	77	0110-12			5 1/2	5.05	
Belhaven	28.30	0200-0245-12					3-4		In eye 45 minutes
Tarboro	28.96	0215-12	NW 75	0215-12	NW 90	0215		5.85	
Manteo	28.50		80	0300-12	120				
Atlantic Beach	28.46	0005-12							
VIRGINIA									
Norfolk FWF					89	0648-12			

TROPICAL CYCLONE DATA

HURRICANE DONNA
August 29-September 13, 1960

Station	Sea Level Pressure (inches)	Time	Maximum Winds M.P.H.	Time	Gusts	Time	Tide* (feet)	Rainfall (inches)	Remarks
MARYLAND									
Ocean City		0820-12	E 83						Wind before instruments became unreliable.
Salisbury FAA	28.76	0801-12	NNW 58		NNW 83	1002		5.96	Wind slackened 0801-0858.
NEW JERSEY									
Wildwood Churn	28.60		W 50		100			2.05	
Beach Haven Churn	28.48		WNW 40	1300-1330	80				
Long Branch	28.55	1220-12	E 72	1256	E 79	1256		5.96	
Seaside Park	28.46		W 40		W 70				
NEW YORK									
Brookhaven	28.38	1450-12			SE 65	1310			Wind shift SE then S to SW and W and lull 1430-1500. Wind gusts, 300 foot level, SE 90.
Willets Point							7.1		
Montauk					125				
Nassau								5.57	
Glen Falls			NNW 30-50						
Tannersville								7.30	
Poughkeepsie					50				
CONNECTICUT									
Bridgeport	28.57		NW 48				11.7 MLW		
Canel Site-Middleton	28.66	1554-12	SE 44	1435	ESE 64	1412			Wind calm 2 1/2 minutes beginning at 1554.
Groton			SW 52		SW 58	1700	7.5 MLW		
Lighthouse Point-New Haven					E 62	1321			
Milford							5-7 MLW		
Putnam					SSW 75	1500			
RHODE ISLAND									
Point Judith			90-100	1615					
MASSACHUSETTS									
Belket								5.17	Strongest wind and wind shift from NE to W at 1800-12.
Belchertown	28.58	1700-12	NE 50	1600				4.48	Calm 1700-1800
Brockton	29.04	1830-12						1.98	Lull 1600-1615
Clinton								4.12	Lull 1800-1815
East Wareham	29.00	1630-12	S 80-85	1830				1.16	Wind shift E then S to SW.
Fall River	28.75	1830-12			93	1623		1.96	Wind slackened and shifted E thru S to W.
Haverhill	28.60	1930-12	SSE 50	1845	E 65	1850		3.99	Wind slackened and shifted SSE to SSW, 1930-1953.
Lowell	29.02	1530-12						3.86	Wind shift from NE to SW about 1730.
Medway	28.60	1530-12	SE 66	1520				4.88	Calm 1555-1615, wind shift SE to NW, thin clouds during calm.
New Bedford	28.88	1700-12						0.76	Lull 1430-1530 wind shift SE to SW.
Oxford								4.48	Calm 1600-1645, sunny to scattered clouds during calm.
Rockport							12 MLW	1.88	High tide at 1930. No calm.
Salem USCG	28.68	1900-12	S 55	1800	S 78	1800-1900	9.1 MLW	2.17	High tide at 1423.
Sandwich			SE 70-85	1750				1.22	Heavy salting.
Shelburne Falls	28.96	1730-12						5.17	Strongest wind from west.
South Royalston	28.76	1730-12						4.45	Calm 1720-1820.
Turner Falls	28.80	1700-12						4.36	Wind shift 1600 from NE to NW.
Walpole	28.59	1739-12	SE 60	1642	75	1645		4.11	Wind slackened and shifted SE to SW, about 1720-1800.
Westover A.F.B.	28.76	1705-12	WNW 47	1858				3.87	Calm 1557-1636.
MAINE									
Bangor (Dow A.F.B.)			SE 30	2010-2155	SE 53 SE 53	2030 2052		2.74	
Belfast							9 MLW	2.42	High tide 1730.
Brunswick NAS	28.81	2100-12	SSW 67	2003				2.09	
Gilead			55-60	2000-2100	60-70	2030		6.22	Wind shift E to W.
Houlton FAA	28.90	2358-12	SSE 29	2358	SSE 45	2358		1.27	
Millinocket					SE 45	2130		1.77	Wind shift SE to W at 2200.
Waterville	28.86	2300-12						2.27	
NEW HAMPSHIRE									
McDowell Dam								7.25	
Keene	28.80	1600-12	E 30-40	1500	E 50	1500		4.35	
Hillsboro								6.05	
Hanover	28.89	1800-12	NW 18	2115				4.30	
Franklin								4.72	Lull and partial clearing 1800-1830.
VERMONT									
Readsboro								5.76	Sky cleared between 2030 and 2100, then cloudy with squall until 2230.
Somerset								6.63	
Wilmington	28.90	1700-12						5.36	

Many pressures are aneroid barometer readings. Maximum winds and gusts are estimates in many cases.
Tides above normal except where indicated. All times are Eastern Standard Time.

TROPICAL CYCLONE DATA

HURRICANE ETHEL
September 14-17, 1960

Station	Sea Level Pressure (inches)	Time	Wind				Tide * (feet)	Rainfall (inches)
			Fastest Mile	Time	Gusts	Time		
ALABAMA								
Anniston	29.98	1901-16	SSW 22	0159 -17	SSW 40			4.34
Birmingham	29.92	1445-16	E 26	1317	ESE 33			1.73
Ft. Morgan (USCG)			60	1015	70			
Mobile	29.66	1505-15	ESE 36[1]	1053	SSE 51	2006	3.92	3.22
Montgomery	29.94	1458-15	S 27	1502	SSE 35			2.04
LOUISIANA								
Burrwood	29.44	0328-15	N 52	0328	N 69	0315	2-3	
New Orleans WBO	29.66	1300-15	E 23	2049 -14				
New Orleans WBAS	29.71	1355-15	NNW 19	0530	NW 27	1055		
Port Sulphur	29.72	0530-15	NW 45	0530			1.75	1.96
Quarantine (USCG)	29.45	0400-15	† N 92	0400				
Venice	28.70	0500-15	ENE 90	0415	ENE 105	0415		
Violet	29.65	1400-15	†NW 50	1415				2.07
MISSISSIPPI								
Bay St. Louis	29.48	1730-15					3-4	5.58
Biloxi (Keesler AFB)	28.98	1700-15	NE 56	1353				
Gulfport	28.92	1500-15	† N 60	1500	† N 70	1500	5	
Meridian	29.78	16	ENE 25[1]		46			
Pascagoula	29.50	1500-15	SSE 43	1600	ESE 55 SSE 55		4.5	
FLORIDA								
Apalachicola					50	1052	3-4	
Pensacola WBAS	29.77	0540-15	E 32	0458	51	0758	2.5	
Pensacola WBO	29.77	0515-15	E 31	0540				

1 One minute wind speed. † Estimated wind. *Tides are mean sea level, except when indicated. All times are Central Standard Time.

NORTH ATLANTIC TROPICAL CYCLONES, 1960

	Storm name	Date	Area where first reported	Coast lines crossed	Highest wind speed reported	Lowest pressure reported	Place of dissipation reported	Intensity	Remarks
1	UNNAMED	June 22-28	Southwestern Gulf of Mexico	Texas	50 mph, gusts 60 Padre Island Park, Tex.	1002.4 mb. (29.60 in.) Alice, Tex.	Southwestern Great Lakes Area	Tropical Storm	Excessive rains Texas coastal bend, ranging up to 29.76 in., in 3 days at Port Lavaca caused extensive flooding. Fatalities: Texas 12, Arkansas 3, by drowning from floods and loss of shrimp boat in Gulf.
2	ABBY	July 9-16	East of Windward Islands	British Honduras	Est. 90-100 mph, reconnaissance Eastern Caribbean, July 10	995 mb. (29.38 in.) Reconnaissance just off coast of Honduras	Southern Mexico	Hurricane	Fatalities. 6 on St. Lucia in landslide. Damage heavy on St. Lucia, Martinique, and southern British Honduras, particularly crops.
3	BRENDA	July 28-31	Northeastern Gulf of Mexico	Florida, North Carolina, Connecticut	53 mph, Cape Hatteras, N.C. Gust 65 mph, Cape Cod Canal, Mass.	992.6 mb. (29.31 in.) Boston, Mass.	Northeastern Quebec	Tropical Storm	Record rainfall Tampa, Fla., 12.11 in. in 24-hours. High tides and waves caused damage in west-central Florida. Rainfall beneficial in Middle Atlantic States. Several traffic deaths indirect result of storm.
4	CLEO	Aug. 17-20	Southeastern Bahama Islands	None	Est. 80 kt., reconnaissance, western Atlantic between New England and Bermuda, Aug. 19.	982 mb. (29.00 in.) Est., west of Bermuda	Atlantic south of Newfoundland	Hurricane	Little damage.
5	DONNA	Aug. 29-Sept. 13	Southeastern Atlantic off west coast of Africa	Florida, North Carolina, Long Island, Connecticut	Est. 140 kt., reconnaissance Sept. 3, E. of Lesser Antilles 130+ kt., Ragged Island, Bahamas. 92 mph, gust 121, Ft. Myers, Fla. 80 mph, gust 91, Cape Henry, Va. 95 mph, gust 130, Block Island, R.I.	933 mb. (27.55 in.) Conch Key, Fla.	Davis Strait	Hurricane	Record property and crop damage in Florida, estimated at $300 million. First tropical cyclone with hurricane force winds in Florida, Middle Atlantic States and New England in 75-yr. record. Fatalities: 50 U.S., 115 Antilles, most from floods in Puerto Rico. Winds estimated near 140 mph with gusts 175-180 mph on central Keys and lower southwest Florida coast.
6	ETHEL	Sept. 14-17	South-central Gulf of Mexico	Mississippi	Est. 140 kt. reconnaissance, afternoon of Sept. 14, north-central Gulf of Mexico 90 mph, gust 105, Venice, La.	972 mb. (28.70 in.) north-central Gulf of Mexico	West-central Tennessee	Hurricane	First tropical cyclone detected by MAMOS (Marine Automatic Meteorological Observing Station) located in central Gulf of Mexico. Heavy rainfall along coast of Alabama and northwestern Florida. Tides 2-5 ft. above normal. Several tornadoes and waterspouts in Alabama and northwestern Florida. Most damage confined to coastal areas.
7	FLORENCE	Sept. 17-26	Northeast of Leeward Islands	Florida	Est. 50-55 mph, reconnaissance, morning of Sept. 18, north of Hispaniola. Gust 52 mph, Vero Beach, Fla.	1003 mb. (29.62 in.) north of Hispaniola	Central Mississippi	Tropical Storm	Heavy rains over southern and east-central Florida, up to 8-12 in. in some places, augmented flooding.

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(10-55)

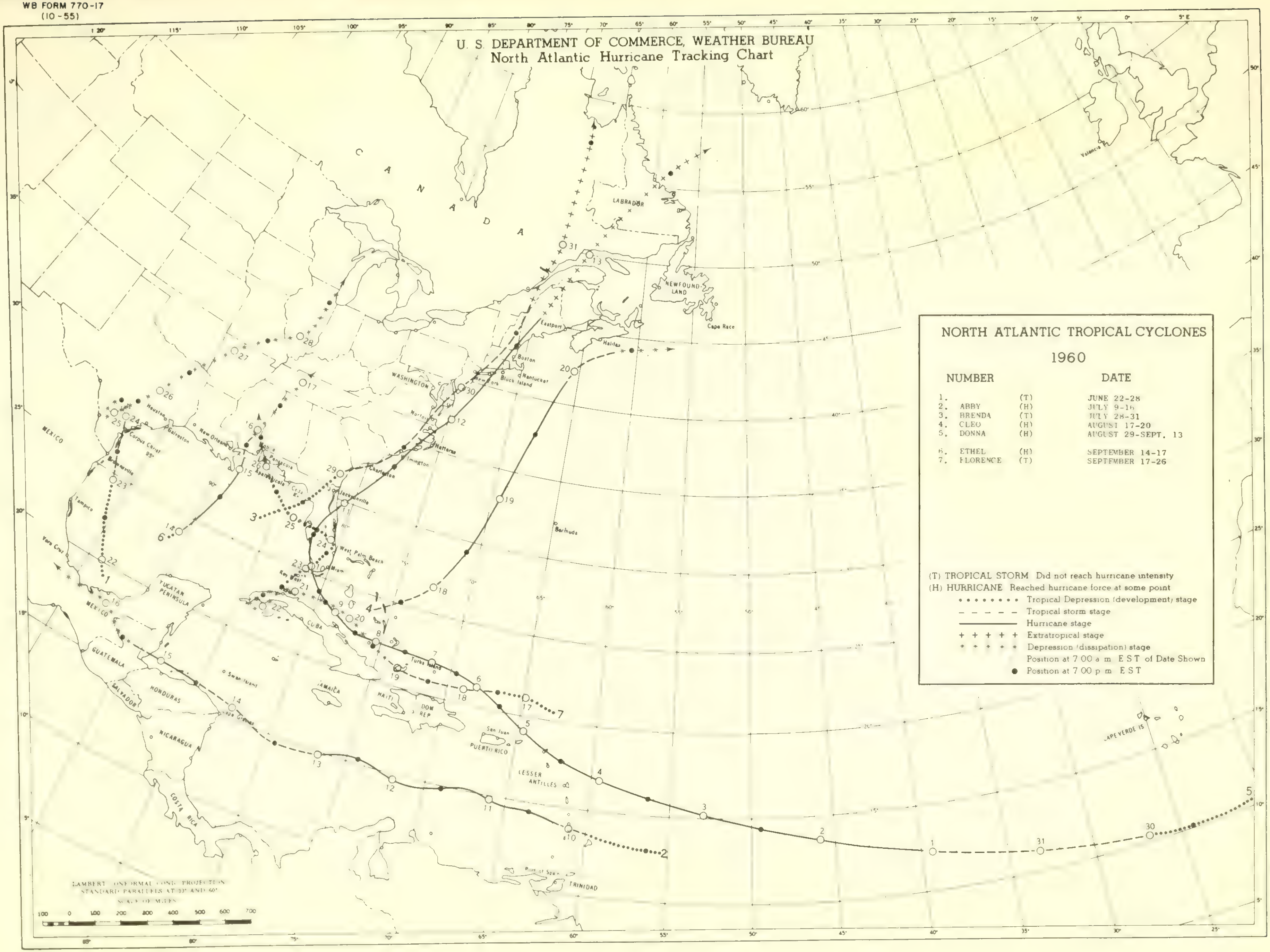


Fig. 1

NORTH ATLANTIC TROPICAL CYCLONES FOR PAST YEARS

Frequency of Tropical Cyclones (Including Hurricanes) by Months and Years

		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1886			3	1	2	2	2			10
1887		1		2	2	3	6	1	2	17
1888			1	1	2	2	1	3		10
1889		1	1		1	5	1			9
1890					1					1
1891				1	2	3	4	1		11
1892			1		1	4	3			9
1893			1	1	5	3	1	1		12
1894					2	1	3			6
1895					2	1	3			6
1896				1	1	2	2			6
1897					1	2	2			5
1898					2	5	2			9
1899				1	2	1	2			6
1900					1	3	3			7
1901			1	2	2	3	2			10
1902			2			1	1	1		5
1903				1	1	4	2	1		9
1904			1			1	3			5
1905						3	2			5
1906			2		1	3	4	1		11
1907			1			2	1			4
1908	Mar. 1			1	1	3	2			8
1909			2	2	2	2	1	1		10
1910					1	2	1			4
1911					2	1	1			4
1912			1	1		1	2	1		6
1913			1		1	1	1			4
1914						1				1
1915				1	2	2				5
1916			1	2	3	4	3	1		14
1917					2	1				3
1918					3	2				5
1919				1		1		1		3
1920						4				4
1921			1			3	2			6
1922			1			1	2			4
1923					1	1	5			7
1924			1		2	2	2	1		8
1925						1		1		2
1926				1	2	5	2	1		11
1927					1	3	3			7
1928					2	3	1			6
1929			1			1	1			3
1930					2					2
1931			1	1	2	3	1	1		9
1932		1			3	3	3	1		11
1933		1	1	3	7	5	3	1		21
1934		1	1	1	2	2	3	1		11
1935					3	1	2			6
1936			3	2	6	4	1			16
1937				1	2	6				9
1938					3	1	3	1		8
1939			1		1	1	2			5
1940		1			3	2	2			8
1941						4	2			6
1942					3	3	3	1		10
1943				1	2	4	3			10
1944				3	2	4	2			11
1945			1	1	4	3	1			10
1946			1	1	1	1	2			6
1947				1	2	3	3			9
1948		1		1	2	3	1	1		9
1949					3	7	2	1		13
1950					4	3	6			13
1951		1			3	4	2			10
1952	Feb. 1				2	2	2			7
1953		1			3	4	4	1	1	14
1954			1	1	2	4	1	1	1	11
1955				1	4	5	2			12
1956			1	1	1	4	1			8
1957			2		1	4	1			8
1958			1		4	4	1			10
1959		1	2	2	1	3	2			11
1960			1	2	1	3				7
Totals	Feb.Mar. 1 1	10	40	43	135	199	140	26	4	599

Frequency of Tropical Cyclones Reaching Hurricane Intensity by Months and Years

		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1886			2	1	2	2	1			8
1887				1	2	3	2	1	1	10
1888			1		2		1	1		5
1889		1			1	3				5
1890					1					1
1891				1	2	3	2			8
1892					1	2	1			4
1893			1	1	5	3				10
1894					1	1	3			5
1895					1		1			2
1896				1	1	2	2			6
1897					1	1				2
1898					2	2				4
1899				1	2	1	1			5
1900					1	2				3
1901				1	2					3
1902			1			1	1			3
1903				1	1	3	2	1		8
1904						1	1			2
1905							1			1
1906			1		1	2	2			6
1907										0
1908	Mar. 1			1		2	1			5
1909				1	1	1	1			4
1910						2	1			3
1911					2	1				3
1912						1	2	1		4
1913			1		1	1				3
1914										0
1915					2	2				4
1916			1	2	3	2	2	1		11
1917					1	1				2
1918					2	1				3
1919						1				1
1920						4				4
1921			1			2	1			4
1922						1	1			2
1923					1	1	1			3
1924					2	1	1	1		5
1925								1		1
1926				1	2	4	1			8
1927					1	3				4
1928					2	1	1			4
1929			1			1	1			3
1930					2					2
1931						2				2
1932					3	1	1	1		6
1933			1	1	3	3	1			9
1934			1	1	1	1	1	1		6
1935					2	1	2			5
1936			1	1	3	2				7
1937						3				3
1938					2	1				3
1939					1		2			3
1940					3	1				4
1941						3	1			4
1942					3			1		4
1943				1	1	2	1			5
1944				2	1	3	1			7
1945			1		1	1	1			4
1946				1		1	1			3
1947					2	1	2			5
1948					1	3	1	1		6
1949					2	4	1			7
1950					4	3	4			11
1951		1			2	3	2			8
1952					2	2	2			6
1953					2	3	1			6
1954			1		2	3	1		1	8
1955					3	5	1			9
1956				1	1	1	1			4
1957			1			2				3
1958					3	3	1			7
1959			1	2		3	1			7
1960				1	1	2				4
Totals	Mar. 1	2	17	24	100	128	65	11	2	350

NORTH ATLANTIC TROPICAL CYCLONES FOR PAST YEARS—CONT'D.

TOTAL NUMBER OF TROPICAL CYCLONES, LOSS OF LIFE AND DAMAGE

Year	Total Number Tropical Cyclones* All Areas	Total Number Tropical Cyclones* Reaching U.S. Coast	Total Number Hurricanes All Areas	Total Number Hurricanes Reaching U.S. Coast	Loss of Life Total All Areas	Loss of Life United States	Damage by Categories** Total All Areas	Damage by Categories** United States
1886	10	7	8	6				
1887	17	4	10	3				
1888	10	6	5	3				
1889	9	4	5	2				
1890	1	0	1	0				
	47	21	29	14				
1891	11	4	8	2				
1892	9	3	4	0				
1893	12	7	10	6				
1894	6	3	5	2				
1895	6	4	2	1				
	44	21	29	11				
1896	6	4	6	4				
1897	5	4	2	1				
1898	9	6	4	3				
1899	6	4	5	3				
1900	7	3	3	1		6000		7
	33	21	20	12				
1901	10	6	3	2		10		6
1902	5	3	3	1		#		#
1903	9	2	8	2		9		6
1904	5	3	2	2		#		6
1905	5	2	1	0		#		#
	34	16	17	7				
1906	11	6	6	4		285		7
1907	4	3	0	0		#		#
1908	8	2	5	1		#		#
1909	10	7	4	3		404		7
1910	4	2	3	2		13		6
	37	20	18	10				
1911	4	2	3	2		17		6
1912	6	4	4	2		12		6
1913	4	3	3	2		#		#
1914	1	1	0	0		#		#
1915	5	4	4	3		600		8
	20	14	14	9				
1916	14	8	11	6		107		7
1917	3	1	2	1		5		5
1918	5	2	3	1		34		6
1919	3	2	1	1		287		7
1920	4	3	4	2		2		6
	29	16	21	11				
1921	6	2	4	2		5		6
1922	4	1	2	0		0		#
1923	7	4	3	2		0		4
1924	8	3	5	2		2		3
1925	2	2	1	1		6		3
	27	12	15	7				
1926	11	4	8	4		269		8
1927	7	1	4	0		0		#
1928	6	3	4	2		1836		7
1929	3	2	3	2		3		6
1930	2	1	2	0		0		2
	29	11	21	8				
1931	9	2	2	0		0		#
1932	11	5	6	2		0		#
1933	21	7	9	5		63		7
1934	11	5	6	3		17		6
1935	6	2	5	2		414		7
	58	21	28	12				
1936	16	7	7	3		9		6
1937	9	4	3	0		0		4
1938	8	4	3	2		600		8
1939	5	3	3	1		3		3
1940	8	3	4	2		51		6
	46	21	20	8				
1941	6	4	4	2		10		7
1942	10	3	4	2	17	8	7	7
1943	10	4	5	1	19	16	7	7
1944	11	4	7	3	1076	64	8	8
1945	10	5	4	3	29	7	8	8
	47	20	24	11				
1946	6	4	3	1	5	0	7	7
1947	9	7	5	3	72	53	8	8
1948	9	4	6	3	24	3	7	7
1949	13	3	7	2	4	4	8	8
1950	13	4	11	3	27	19	7	7
	50	22	32	12				
1951	10	1	8	0	244	0	7	6
1952	7	2	6	1	16	3	6	6
1953	14	6	6	2	3	2	7	7
1954	11	4	8	3	720+	193	9	9
1955	12	5	9	3	1518+	218	9	9
	54	18	37	9				
1956	8	2	4	1	76	21	8	7
1957	8	5	3	1	475	395	8	8
1958	10	1	7	0	49	2	7	7
1959	11	7	7	3	57	24	7	7
1960	7	5	4	2	185	65	8	8
	44	20	25	7				
Total	599	274	350	148				
Median	8	4	4	2				

** The Weather Bureau has for some time recognized the fact that without detailed expert appraisal of damage all figures published are merely approximations to fact. Since errors in dollar estimates vary in proportion to the total damage, storms are placed in categories varying from 1 to 9 as follows:

1	Less than $50	4	$5000 to $50,000	7	$5,000,000 to $50,000,000
2	$50 to $500	5	$50,000 to $500,000	8	$50,000,000 to $500,000,000
3	$500 to $5000	6	$500,000 to $5,000,000	9	$500,000,000 to $5,000,000,000

Blank spaces indicate no figures available.

* Including hurricanes.
# Not reported in literature, believed minor.
+ Additional deaths for which figures are not available.

TROPICAL CYCLONES IN THE EASTERN NORTH PACIFIC, 1960

Max W. Mull
U. S. Weather Bureau, San Francisco, Calif.

Eight tropical cyclones were charted in the eastern North Pacific during the 1960 season. Five of these are known to have reached hurricane intensity: Celeste in July; Estelle in August; Fernanda in September; and Gwen and Hyacinth in October. Only Diana and Hyacinth curved northward and eastward sufficiently to reach the mainland. All the others turned to the west.

In most instances the storms were detected in a region of squalls within the zone of intertropical convergence. Observations were insufficient to warrant any detailed discussion of the pre-existing synoptic patterns.

Generally, the storms this season were detected earlier and followed longer than in previous years. One of the hurricanes, Estelle, was tracked for 11 days. The early detection of the storms has been aided by the excellent cooperation of coastal shipping.

Once detected, the problem, at times, has been to follow the storm through an area of sparse reports, especially as it moves away from the coastline. The success in following Estelle, and several of the others, was largely due to the efforts of the 55th Weather Reconnaissance Squadron, McClellan Air Force Base. The eye of Estelle, for example, was pinpointed by daily reconnaissance flights for eight consecutive days, until the storm had definitely ceased to be a threat.

No reports of damage have been received. Diana and Hyacinth both had partially dissipated by the time they reached land. Isla Socorro reported winds to 117 kt. as Estelle moved across this small island, but it is not known to what extent the people and property were affected.

Tropical cyclones with winds between 34 kt. and 63 kt. are classified as tropical storms and with winds of 64 kt. or greater as hurricanes. All times are reported in G. M. T. A summary of each of the tropical cyclones originating in the eastern North Pacific Ocean follows and their tracks are shown on the accompanying chart.

TROPICAL STORM ANNETTE, JUNE 8-13

Annette appeared on June 8 in a circulation which became organized about 180 mi. south of Tehauntepec. Several reports of 30-kt. winds were received during these first hours. Until the 10th Annette moved slowly westward, then curved slightly to the northward to parallel the coastline. The speed of the storm increased to about 10 kt. The GINNHEIM at 1800 on the 10th reported winds of 45 kt. as the ship passed close to the storm center. No reports of stronger winds were received. On the 12th the storm slowed, curved toward the west, and then the speed increased again to 10 kt. or more. The storm could no longer be detected as it moved out of the shipping lanes.

TROPICAL STORM BONNY, JUNE 21-26

Bonny was detected by the CAPETAN YIANNIS 250 mi. southwest of Acapulco at 2100 June 21. The vessel reported a 20-kt. northeast wind which backed quickly to the southwest and increased to 35 to 40 kt. Bonny moved northwestward at 7 to 8 kt. until the 23d, when it veered to the north and subsequently reached latitude 20°N. on the 24th. At this point the storm slowed and curved sharply to the west. Winds to 45 kt. were reported by the OCEANULLA at this time. Bonny was dropped a day later as it weakened and moved into an area of sparse reports.

HURRICANE CELESTE, JULY 19-22

Celeste was detected on July 19, when several ships reported winds from 30 to 40 kt. defining a center 170 mi. west of Acapulco. There had been evidence of a loosely organized circulation in this area for about a day prior to this. The center moved northwestward at a speed of about 7 kt. paralleling the coast. Winds continued to increase, the PORT DEL SOL reporting 60-kt. winds early on the 20th. The circulation around Celeste had undoubtedly reached hurricane intensity by this time. Celeste was reasonably well documented throughout its path. As an example, at 1200 July 21, the MARINE SNAPPER, 120 mi. northeast of the center, reported a wind east-southeast, 65 kt., and Isla Socorro, about the same distance to the southwest of the center, reported a west 50-kt. wind. On the 22d the Air Force scheduled a reconnaissance flight, which fixed the positions of the storm at 1200 and 1800. The observer estimated the maximum surface wind at that time to be 50 kt. Also on the 22d, the SANYO, reporting winds of 55 kt., furnished an excellent series of reports as she transited the storm. The hurricane had by this time begun to diminish and was dropped later on the 22d as it continued toward the west.

HURRICANE DIANA, AUGUST 16-19

Diana was located 180 mi. southwest of Tehuantepec at 2100 August 16, by the PIONEER MINX, which reported gusts to 45 kt. The storm moved northwestward along the coastline at a speed of about 12 kt. At 1500 on the 18th an Air Force reconnaissance flight located the storm about 100 mi. west of Cape Corrientes. At this time the maximum observed surface winds were estimated to be 50 kt. The observers reported an elliptical shaped eye with a diameter of about 20 mi. A few hours later the NEVADA reported a wind of 75 kt. On the basis of limited data it is believed that Diana then began to weaken as it moved toward the Gulf of California. At 1800 on the 19th the storm was located in La Paz Bay with reported winds of 35 kt. and estimated maximum winds, near the center, of 50 kt. The storm continued to dissipate and lose its identity as it moved into the Gulf.

HURRICANE ESTELLE, AUGUST 28-SEPTEMBER 9

Estelle was located at 1800 August 28, 160 mi. south-southwest of San Salvador by the TURRIALBA, which reported a wind of 50 kt. and a 6-mb. pressure fall in 3 hr. Estelle moved at an average speed of about 10 kt. northwestward along the coast. Twenty-four hr. after the first report, the NESTOS was sufficiently near the center to also report a 50-kt. wind. Estelle was tracked the next couple of days using continuity and few reports of light winds on the periphery of the storm. Finally at 1800 September 2, Isla Socorro received almost the full force of the hurricane. The island reported a north-northwest wind of 95 kt. Six hr. later, at 0000, Isla Socorro reported the wind had backed to northwest and increased to 117 kt. At 0300 the wind had further backed to the west with no diminution of intensity. In the meantime an Air Force reconnaissance plane had also fixed the center of the hurricane. It reported a well-defined eye 22 mi. in diameter at 2100 centered about 30 mi. north-northeast of Isla Socorro. Estelle slowed to a speed of 6 or 7 kt. as it passed over Isla Socorro and curved to the west-southwest. The Air Force continued to make reconnaissance flights as Estelle recurved to the north and then to the northwest and finally dissipated during the 9th. Estelle was the longest lived of the season's tropical cyclones. Excellent reconnaissance data tracked the storm as it moved through areas where surface ship reports were sparse or completely missing.

HURRICANE FERNANDA, SEPTEMBER 2-8

Fernanda was first positioned at 1800 September 2, 160 mi. south-southwest of San Salvador, almost exactly where Estelle was first reported on August 28. Fernanda moved with a speed of 10 kt. or greater on a more westerly track than Estelle for the first 3 days. It then curved to the northwest and crossed Estelle's track on the 5th. Reported winds reached 65 kt. on the 6th. After the 6th Fernanda weakened to such an extent that a reconnaissance flight on the 8th could find no closed circulation.

HURRICANE GWEN, OCTOBER 4

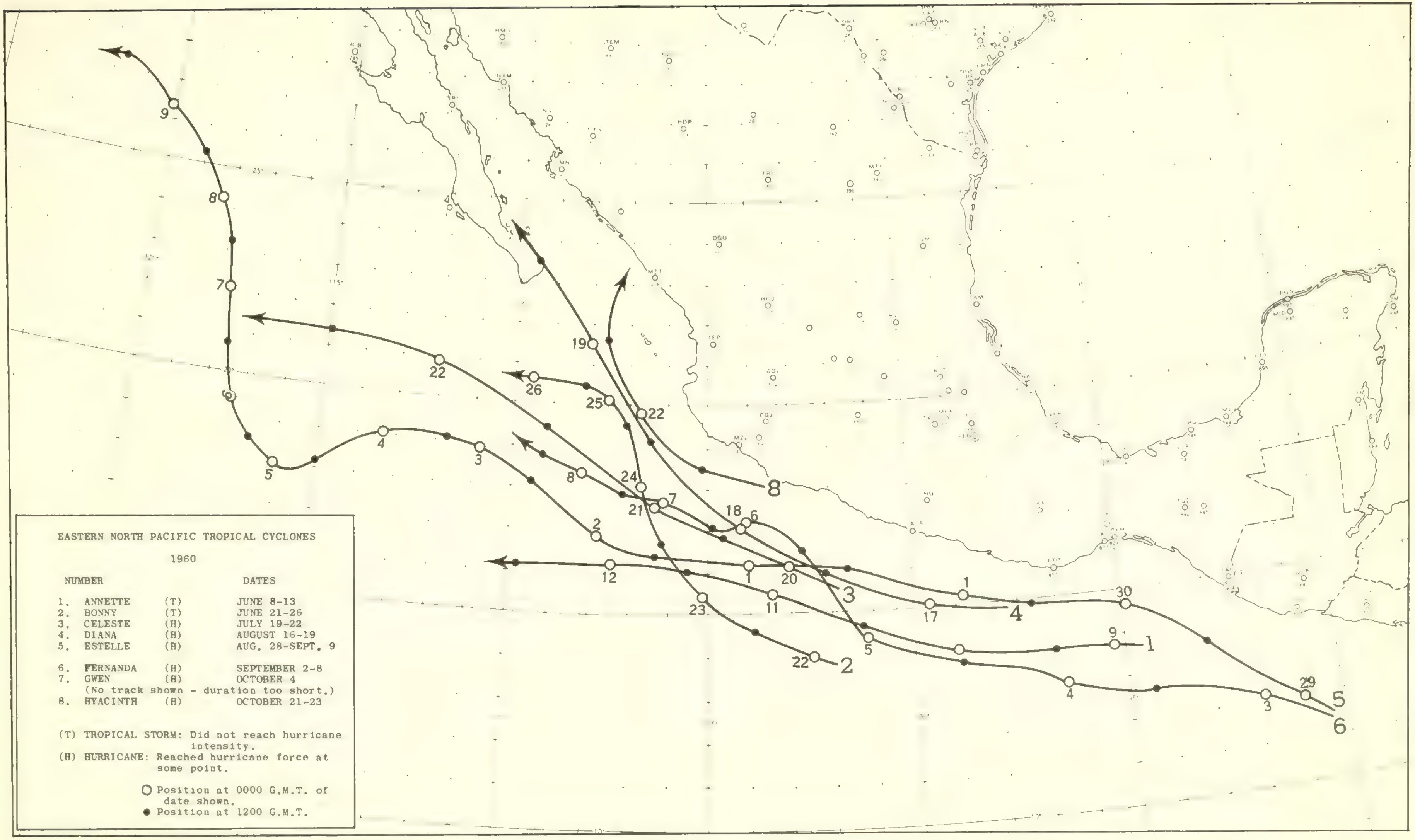
Gwen was located at 16.7°N., 115°W. at 0600 October 4, on the basis of a wind report of 60 kt. by the LORD LODRINGTON. It is assumed that Gwen moved toward the northwest but no further reports were received. An Air Force reconnaissance flight on the 5th found no trace of the storm. No track is shown for Gwen.

HURRICANE HYACINTH, OCTOBER 21-23

Advisories were begun on Hyacinth as the result of a report of a 50-kt. wind by the JEAN LAFITTE at 0300 October 21. The center of Hyacinth was then placed 70 mi. south-southeast of Manzanillo. Hyacinth moved northwestward at 8 to 10 kt., then curved gradually toward the north. On the 22d a report of 60 kt. from the C. G. MUSSER led to upgrading Hyacinth to a hurricane. Hyacinth gradually curved toward the Mexican coast north of Mazatlan. Available reports indicate Hyacinth rapidly dissipated as it approached the coast.

EASTERN NORTH PACIFIC TROPICAL CYCLONES, 1960

Storm name	Date	Area where first reported	Coast lines crossed	Highest wind speed reported	Lowest pressure reported	Place of dissipation reported	Intensity	Remarks
1 ANNETTE	June 8-13	13.5°N., 95°W.	None	101800Z, 45 kt., GINNHEIM 110000Z, 45 kt., RAGNAR INDDAL	995.7 mb. 091450Z SANTA MADRE	16°N., 110°W.	Tropical Storm	
2 BONNY	June 21-26	14°N, 102.5°W.	None	240900Z, 45 kt., OCEANULLA	998 mb. 212000Z CAPETAN YIANNIS	21°N., 110°W.	Tropical Storm	
3 CELESTE	July 19-22	16.5°N., 103°W.	None	211200Z, 65 kt., MARINE SNAPPER	993.5 mb. 210000Z DUKE OF MISTRA	21.5°N., 117°W.	Hurricane	
4 DIANA	Aug. 16-19	15°N., 98°W.	Baja Calif. near La Paz	181800Z, 50 kt., NEVADA MARU 181800Z, 50 kt., Air Force Reconnaissance	987 mb. 181800Z Air Force Reconnaissance	Near La Paz	Tropical Storm	
5 ESTELLE	Aug. 28-Sept. 9	11.5°N., 91°W.	None	030000Z, 117 kt., Isla Socorro	976.8 mb. 030000Z Isla Socorro	28°N., 123°W.	Hurricane	
6 FERNANDA	Sept. 2-8	11°N., 91°W.	None	060900Z, 65 kt., DONA ALICIA	999.0 mb. 060900Z DONA ALICIA	19°N., 110°W.	Hurricane	
7 GWEN	Oct. 4	17°N., 115°W.	None	040600Z, 60 kt., LORD LODRINGTON	999.9 mb. 040600Z LORD LODRINGTON		Hurricane	Air Force Reconnaissance found no evidence of a disturbance on Oct. 5.
8 HYACINTH	Oct. 21-23	18°N., 104°W.	Mexico north of Mazatlan	221500Z, 65 kt., SANTA FE	989.4 mb. 212230Z ASSEBURG	North of Mazatlan	Hurricane	



EASTERN NORTH PACIFIC TROPICAL CYCLONES

1960

NUMBER		DATES
1. ANNETTE	(T)	JUNE 8-13
2. BONNY	(T)	JUNE 21-26
3. CELESTE	(H)	JULY 19-22
4. DIANA	(H)	AUGUST 16-19
5. ESTELLE	(H)	AUG. 28-SEPT. 9
6. FERNANDA	(H)	SEPTEMBER 2-8
7. GWEN (No track shown - duration too short.)	(H)	OCTOBER 4
8. HYACINTH	(H)	OCTOBER 21-23

(T) TROPICAL STORM: Did not reach hurricane intensity.

(H) HURRICANE: Reached hurricane force at some point.

○ Position at 0000 G.M.T. of date shown.

● Position at 1200 G.M.T.

TYPHOONS OF THE WESTERN NORTH PACIFIC, 1960

Based on the Annual Typhoon Report, 1960,
Now Being Prepared by the Joint Typhoon Warning Center,
Fleet Weather Central, Guam, M. I.

During 1960, nineteen typhoons (tropical cyclones with wind speeds of 64 kt. or greater) formed in the western North Pacific. In addition, tropical storms Lucille and Nadine are included in this report since both were referred to as typhoons in the press. In this article the western North Pacific refers to the area extending from the east coast of the Asian mainland eastward to 180° longitude and from the equator northward.

The tracks of these typhoons are shown in figure 1. Pertinent information for each typhoon is summarized in the accompanying table. In almost all instances reports of damage, deaths, etc., contained in this article were extracted from press releases.

In the text that follows tropical storm intensity indicates wind speeds from 34 to 63 kt. and tropical depression intensity, wind speeds less than 34 kt. In each instance the typhoon is identified by name and dates, the dates applying to the warning period. All dates and times given are for the Greenwich meridian. All distances are given in nautical miles.

TYPHOON KAREN, APRIL 22-25

On April 13, nine days before the first warning was issued, TIROS I indicated an area of cloudiness in the vicinity of 5°N., 145°E. Subsequent surface charts confirmed the existence of a cyclonic vortex in this area. This cyclone moved slowly westward, passed south of Koror, and approached the Philippines. Insufficient data made accurate analysis difficult, but central pressures were believed to be no lower than 1005 mb. and maximum wind not greater than 20 kt. At 1200 on the 21st the cyclone was moving over the Philippines, and reports indicated that it was intensifying. Warning number 1 on Karen was issued at 0000 on the 22d, at which time the cyclone was located slightly east of Cebu in the southern Philippines.

Karen intensified, moved northwestward, and passed 120 mi. southwest of Manila. The diameter of the storm remained very small, and sparse surface reports did not indicate that Karen was of typhoon intensity. However, on the basis of a reconnaissance flight, Karen was upgraded to a typhoon at 1800 on the 24th. The typhoon began to gradually recurve in the South China Sea, and at 1200 on the 25th was downgraded to a tropical storm. The diameter of the eye was very small, averaging only 10 mi. The radius of 50-kt. winds never exceeded 30 mi., and the radius of 30-kt. winds did not exceed 75 mi. Available surface reports showed maximum winds of only 35 kt. Karen traveled at an average speed of 9 kt., and the final tropical warning was issued at 1800 on the 25th. Reports from the Philippines placed at $2 million the damage done by Karen to crops and public works projects. A reported 7,000 persons were left homeless by the typhoon, and several fishing boats were overturned due to the high winds and rough seas. At least 56 persons were reported dead or missing.

TROPICAL STORM LUCILLE, MAY 25-JUNE 1

The 0600 surface chart on the 24th indicated the possible existence of a cyclonic circulation west of Koror. Twenty-four hours later the first warning was issued on Lucille. Also, at this time an elongated, unnamed Low developed northwest of Manila. Lucille moved westward at 7 kt. for the first 12 hr., but then turned northwestward and began to accelerate. At 0000 on the 27th the final warning was issued because the maximum winds around this depression had decreased to only 15 kt. During this time the Low over northwest Luzon had remained quasi-stationary.

The unnamed Low began to move northeastward at 0000 on the 28th and the Clark Air Base rawin indicated that this system had a closed cyclonic circulation at 500 mb. As this Low crossed the Philippines the highest surface winds, 34 kt., were reported in the Manila area. This unnamed Low merged with the circulation that had been Lucille, and the merged system moved northeastward. At 0000 on the 30th warnings on Lucille were renewed, this time as a tropical storm. Lucille, with central wind speeds of 45 kt., accelerated as it moved northeastward and passed 40 mi. west of Iwo Jima at 1700 on the 31st. The strongest surface winds at Iwo Jima were 30 kt., with gusts to 45 kt. The storm then passed within 10 mi. of Peel Island at 2330 on the 31st. This island experienced a minimum pressure of 992 mb. and winds of 50 kt., with gusts to 70 kt., which caused the USS CAYUGA COUNTY (LST) to broach in the harbor. The high wind speeds experienced at Peel Island are not considered representative, and are believed to be 30 to 40 percent higher than representative winds due to the "funneling" effect of the terrain to the south-southwest of the harbor. The winds abruptly decreased once Lucille passed the island. As the storm continued to move northeastward, it accelerated and rapidly became extratropical. The final warning was issued at 0600 of June 1.

TYPHOON MARY, JUNE 3-12

Typhoon Mary originally appeared as a very weak circulation about 200 mi. west of Luzon on the 1st. The Low moved southwestward, a direction of movement not anticipated. The first warning was issued at 1800 on the 3d when it was at approximately 15°N., 114°E., moving westward at 6 kt. The storm intensified and turned slowly northwestward and then northward after 1800 on the 4th. For the next 48 hr. the average speed of movement was only 3 kt., while the wind speeds increased to 60 kt.

As the storm moved northward, it approached Hong Kong with surface winds of 60 kt. or more. The storm probably became a typhoon between 0000 and 1200 on the 7th, but lack of reconnaissance and surface reports prevented an accurate determination of Mary's intensity. Typhoon Mary passed less than 20 mi. west of Hong Kong between 1200 and 1800 on the 8th, decreased in intensity to 50 kt. as it passed over land, and then accelerated toward the northeast. It was the most severe typhoon to pass Hong Kong in 23 yr., where maximum wind gusts of 105 kt. were recorded and 14.12 in. of rain fell in a 24 hr. period. Mary caused over 100 known deaths in Hong Kong, left 18,200 homeless, and caused 2 commercial ships to go aground. Over 50 fishing vessels capsized and sank in anchorages around Hong Kong at the height of the storm. The typhoon placed severe restrictions on the water supply.

At 0600 on the 10th, after remaining over land for approximately 30 hr., Mary had moved to a point north of Taiwan, where it caused some damage to crops. Mary again intensified to typhoon strength between 1200 and 1800 on the 10th with winds of 70 kt. or more, passed 170 mi. north of Okinawa, 70 mi. south of Kyushu, and continued eastward while increasing its speed of movement to 36 kt. by 1800 on the 11th. At this time the typhoon was downgraded to a tropical storm and it became extratropical after 0600 on the 12th. During the 8 1/2 days that warnings were issued, Mary traveled 2300 mi. at an average speed of 12 kt.; the minimum speed was 2 kt., while the maximum speed was 36 kt.

TROPICAL STORM NADINE, JUNE 3-10

A definite cyclonic circulation was evident on the surface chart at 1800 on the 2d in the vicinity of 15°N., 131°E. This Low gradually intensified, and 24 hr. later the first warning was issued.

Nadine moved northward and recurved around the western end of an upper-level High (300 mb. and 200 mb.). The storm followed a very normal track. It did not approach any of the larger Pacific islands and caused no damage. However, several press releases referred to Nadine as being of typhoon intensity. Careful consideration of all reconnaissance data indicated that surface wind speeds associated with Nadine never reached typhoon strength. The maximum winds from surface data were 45 kt., reported by three different ships during the 5th, although, on June 6, 7 and 8, Navy P2V aircraft estimates of the maximum wind speed varied from 60 to 75 kt. As Nadine approached 30°N., it began to accelerate and showed signs of weakening and becoming extratropical. The final warning was issued at 0000 on the 10th.

TYPHOON OLIVE, JUNE 23-30

Typhoon Olive developed from a weak, quasi-stationary cyclonic circulation in the vicinity of Yap. The initial warning was issued at 1800 on the 23d, 7 days after the circulation was first detected. Olive intensified and moved slowly westward toward the Philippines. It became a tropical storm by 0000 on the 24th and was upgraded to a typhoon at 1200 with maximum sustained winds of 115 kt.

As it moved over the Philippine Islands, Olive weakened, and passed 25 mi. northeast of Manila at 1800 on the 26th. After entering the South China Sea, the typhoon reintensified, moved northwestward and onto the China mainland about 200 mi. west of Hong Kong, and then dissipated. Examination of the Clark Air Base upper-level winds indicated that the typhoon extended through the 40,000 ft. level. Olive conformed to the climatological tracks for storms originating near Yap and Koror in June. The speed of movement varied from 8 to 13 kt., and the average direction of movement was 295°(WNW).

In the Philippines over 100 persons were killed; hundreds of men, mostly fishermen, were reported missing; and some 50,000 persons were homeless in the wake of Olive. Olive brought typhoon intensity-winds to the Manila area and completely paralyzed the city. Casualties were not greater in the Manila area because sufficient warning was given to the people who fled to higher ground, but damage to crops was extensive.

TYPHOON POLLY, JULY 17-29

Surface analyses had shown evidence of a cyclonic circulation in the vicinity of Koror for 3 days before the initial warning which was issued at 1200 on the 17th. This cyclone intensified rapidly, becoming a tropical storm by 1800 on the 17th and a typhoon by 1200 on the 18th. Polly moved north-northwestward at an average speed of 4 kt. and intensified until the wind speeds reached 115 kt.

After passing 130 mi. south of Okinawa at 0000 on the 23d, the typhoon became quasi-stationary and completed a counterclockwise loop. During its loop Polly weakened. As it began to move north-northwestward again, it accelerated and weakened further as it moved into the Yellow Sea. The diameter of the eye varied from 10 mi. to 60 mi. The outstanding feature of this typhoon was the loop that it made in the vicinity of Okinawa. No damage to military installations was reported, and only minor damage was reported to private homes in Okinawan communities. The heavy rains that Polly brought to the Island virtually guaranteed a good rice crop. However, in mainland China, Peiping Radio reported that Polly did considerable damage to homes and crops.

TYPHOON SHIRLEY, JULY 29-AUGUST 6

Shirley also developed in the vicinity of Yap and Koror, and followed a similar but more westerly track than that of Polly. Lack of data prevented any determination of the center winds during Shirley's initial development. The first warning on Shirley was issued at 1200 on the 29th, by which time there was sufficient data to indicate that the cyclone was of tropical storm intensity.

The storm intensified rapidly. At 0600 on the 30th the first typhoon warning was issued, and by 1100 of that day, as Shirley approached Taiwan, the maximum sustained winds were 135 kt. A secondary Low developed and intensified near the southern tip of Taiwan as Shirley moved toward the northern end of the island. Winds of 50 kt. were reported in the vicinity of this secondary Low. The Low rapidly dissipated as Shirley passed over mainland China, and Shirley was downgraded to a tropical storm after having passed Taiwan. Shirley further weakened over mainland China, and warnings were discontinued until the storm moved into the Yellow Sea. The final warning was issued at 0000 on the 6th.

The eye of typhoon Shirley was small and well-defined, and the average eye diameter was 9 mi. The unusual feature of this typhoon was the formation of the secondary Low in the vicinity of Taiwan. This is caused by the modification of the strong winds associated with typhoons by the high terrain of the central mountain range of that island. Shirley claimed 104 lives and rendered more than 50,000 persons homeless as it roared across Taiwan. Rail and highway communications were disrupted, and the only bright spot was that the damage done to crops was negligible because almost all the crops had been harvested before the typhoon hit.

TYPHOON TRIX, AUGUST 4-10

Trix, like Polly and Shirley, developed in the

Yap-Koror area. Evidence of a cyclonic circulation was apparent to the southwest of Guam as early as 0600 on July 29; however, it was not until 0300 on August 4 that the first warning was issued on tropical storm Trix. Trix intensified rapidly and reached typhoon intensity by 0600 on the 5th. Winds increased to 125 kt. within 30 hr. The typhoon accelerated as it moved northwestward, passed 85 mi. south-southwest of Okinawa, and then backed to a westward course. It passed over the northern tip of Taiwan at 0200 on the 8th and then moved west-southwestward. The final warning was issued at 0000 on the 10th when Trix was approximately 100 mi. north of Hong Kong.

As Trix approached Taiwan, a trough developed at the southern tip of the island, and by the 8th a closed cyclonic circulation was evident 150 mi. south of the typhoon. The winds about this secondary Low reached 40 kt., but unlike the secondary associated with typhoon Shirley, this Low persisted as a closed circulation until Trix reached the mainland of Asia at 1800 on the 8th.

The eye of Trix was well-defined throughout the typhoon's life and the average eye diameter was 30 mi. As with Shirley, the unusual feature associated with typhoon Trix was the formation of the secondary Low near the southern tip of Taiwan as the typhoon approached that island. Trix brought heavy rains to Taiwan, and giant sea waves caused by the typhoon washed out many breakwaters.

TYPHOON VIRGINIA, AUGUST 8-12

The extreme southeastern sector of typhoon Trix was the region of development of Virginia. The first warning was issued on the tropical storm stage at 0000 on the 8th, although the circulation was evident 24 hr. earlier. The storm developed about 300 mi. northwest of Guam, and 24 hr. after the first warning, Virginia became a typhoon.

Examination of Virginia's track reveals it to be in the shape of an "S and a half". The typhoon passed 20 mi. to the west of Iwo Jima at 1100 on the 9th and 30 hr. later it was 10 mi. from the island of Shikoku, Japan. It weakened as it passed over southern Japan, rapidly intensified again as it moved into the Sea of Japan, and finally weakened and became extratropical as it passed over northern Honshu and moved into the Pacific Ocean. Virginia's circulation was characterized by rapid intensification and a high speed of movement, the average speed of movement throughout its life being 18 kt. The typhoon brought heavy rain squalls and strong winds to Japan, causing 3 deaths. However, it caused little property damage; instead, farmers welcomed the heavy rains for their scorched fields.

TYPHOON WENDY, AUGUST 10-13

Wendy developed quickly in a trough that extended southward from typhoon Virginia. The first warning was issued on Wendy at 1000 on the 10th, and 12 hr. later it reached typhoon intensity. The typhoon intensified, later weakened as it moved northward across southern Japan, and then recurved after it had entered the Sea of Japan. Wendy moved inland 20 mi. east of the point where Virginia had passed 40 hr. previously. Remaining over land for 10 hr., the typhoon's winds weakened from 70 kt. to 35 kt., but the storm intensified again once it entered the Sea of Japan. It then moved across northern Honshu and dissipated.

Wendy was a closed cyclonic circulation through the 500 mb. level. During the storm's formation a cyclonic circulation was evident at 300 mb. and 200 mb. but this Low was not part of the typhoon's circulation. Thus there appeared to be an area of convergence at higher levels over the surface position at which Wendy was forming. Wendy moved at an average speed of 18 kt. and was a typhoon for 30 hr. The unusual features of this typhoon were its formation within the circulation of typhoon Virginia, and also under an area of upper-level convergence.

TYPHOON BESS, AUGUST 16-25

The first evidence of typhoon Bess was a small circulation on the 0600 surface chart on the 13th about 375 mi. northwest of Guam and 750 mi. east-southeast of tropical storm Agnes. A second cyclone, later to become typhoon Carmen, developed simultaneously with Bess in a position between Agnes and Bess. At 0900 on the 16th the initial warning was issued on tropical storm Bess. The storm moved northwestward and passed 30 mi. southwest of Peel Island, after which it moved northward and began to recurve. By 0000 on the 20th Bess had reached typhoon intensity. It then recurved, passing 40 mi. west-southwest of Tori Shima, 25 mi. east of Miyake Jima, and 25 mi. southeast of the island of Honshu.

Continuing to recurve, Bess gradually took up a course of 100°(E.). At approximately 1800 on the 22d the typhoon began reversing direction, moving clockwise and forming a loop whose north-south axis was 50 mi. and whose east-west axis was 175 mi. Bess intersected the original track at 36°N., 152°E. while moving west-northwestward. The typhoon was downgraded to a tropical storm at 0600 on the 23d, and the final warning was issued at 1200 on the 25th.

During the period when warnings were being issued on Bess, the following typhoons and tropical storms appeared on the charts: tropical storm Agnes, typhoon Carmen, typhoon Della, typhoon Elaine, and tropical storm Faye (which later became a typhoon). These tropical cyclones all developed in an extensive trough oriented east-west between 20°N. and 25°N. and extending from 100°E. to 150°E. One unusual feature about Bess was the loop that it made. Another feature was its "long life". It is believed that Bess would have become extratropical after 1200 on the 20th had it not been for the circulation around Della, and later around Faye, transporting warm air into the vicinity of typhoon Bess which prolonged its life about 4 days. Warnings were issued on Bess for a period of 9 days and the storm's average speed of movement was 10 kt. The typhoon caused heavy, continuous rains in the Tokyo area, but no serious flood or wind damage was reported.

TYPHOON CARMEN, AUGUST 16-24

A sharp trough was evident to the southeast of tropical storm Agnes, and when it became apparent that the winds were stronger 500 mi. southeast of Agnes than near its center, this area was closely surveyed. At 0000 on the 16th the first tropical depression warning was issued, and 12 hr. later Carmen was upgraded to a tropical storm. Carmen became a typhoon at 1200 on the 17th when it was about 125 mi. south-southwest of Okinawa. The typhoon moved at an average speed of 3 kt. along an inverted "S" track until it approached the southern end of Okinawa from the southeast. It was downgraded to a tropical storm when it was 50 mi. southeast of Okinawa. The storm moved northwestward until it reached 30°N. and then recurved, accelerated, and moved north-northeastward, passing 140 mi. east of Shanghai at 0600 on the 22d and 20 mi. west of Seoul, Korea, at 0200 on the 23d.

At the time it passed over Korea, Carmen was moving at 36 kt. and carried maximum winds of 45 kt. Typhoon Carmen was large, about 800 mi. in diameter, covering an area of more than 500,000 sq. mi., and it extended through 45,000 ft. on August 19. Another quite unusual feature of this typhoon was the diameter of its eye. Reconnaissance made frequent reports of eye diameters of 100 mi., using surface winds and pressure gradient as the basis of measurement. However, with respect to wall clouds surrounding the eye, radar photographs taken from the CPS-9 at Kadena Air Base show quite clearly, that on August 20, the eye had a diameter of approximately 200 mi. The typhoon traveled at an average speed of 10 kt., and the final warning was issued at 0000 on the 24th when the storm was close to 50°N. Carmen brought surface winds of 50 kt. to Okinawa. It created high waves that pounded the coast of Korea, submerging houses and leaving thousands homeless in Pusan. Many boats were either damaged or wrecked. The property damage done by Carmen in the Republic of Korea was estimated at $2 million.

TYPHOON DELLA, AUGUST 17-31

On August 12 a circulation was evident between Kwajalein and Eniwetok, although the pressure gradient was weak. The system was roughly 350 mi. north-northeast of Truk at 0900 on the 17th, the time when the first warning was issued on tropical storm Della. By 0000 on the 19th, the storm appeared to have weakened to only a trough, and warnings were discontinued.

Based on reconnaissance, warnings were again issued beginning at 0600 on the 20th as Della moved on a west-northwestward track at 11 kt. Della was upgraded to a typhoon at 1200 on the 22d. As the typhoon approached 22°N., 137°E., it made a counterclockwise loop as it slowed to a speed of 3 kt. Upon completing this loop, Della moved north-northwestward and then northward, increasing its speed from 3 kt. to 16 kt. by the time it reached southern Japan. The typhoon rapidly weakened as it passed over Shikoku and western Honshu. It then accelerated to 30 kt. after entering the Sea of Japan where the maximum surface winds reached only 55 kt. The final warning was issued at 0000 on the 31st when the storm was in the extreme northern portion of the Sea of Japan.

Della was unusual because of the counterclockwise loop it made. Also interesting was that at 0914 on the 28th, reconnaissance reported the typhoon to have a double eye, the outer eye being 50 mi. in diameter, while the inner eye was oval-shaped and oriented northeast-southwest. Della damaged communication lines, shipping, and homes on the islands of Shikoku and Honshu, and is credited with the death of 50 persons in Japan. The greatest disaster caused by the typhoon was at Nishinomiya where a huge landslide trapped about 70 workmen who had been constructing a road. The evacuation of thousands of persons from coastal areas before the storm hit southern Japan is believed to have kept casualty figures down. Damage to fields and crops was heavy both in Japan and in the Republic of Korea.

TYPHOON ELAINE, AUGUST 19-25

Typhoon Elaine began as a tropical depression at 2200 on the 19th. At that time the system was 200 mi. southeast of Hong Kong, moving east-northeastward at 6 kt. At 1200 on the 20th Elaine became a tropical storm, and at 1800 on the 21st, 110 mi. west of Batan Island, was upgraded to a typhoon. Elaine then moved north-northeastward, roughly parallel to and about 50 mi. from the east coast of Taiwan, to 24°N., before reversing direction. The typhoon was downgraded to a tropical storm at 1800 on the 22d, then "jumped" across the island. Moving west-northwestward after leaving Taiwan, Elaine crossed inland at 0000 on the 25th, and the last warning was issued at 0600 on the 25th.

Elaine was unusual because of the track that it followed. It appears that the storm was steered by the upper level circulation associated with typhoon Carmen until 1800 on the 22d, and then by the circulation above 700 mb., of the High over the mainland of Asia. The cyclonic circulation extended to 300 mb. during part of the period that Elaine was a typhoon. During its warning life it traveled at an average speed of 7 kt. Elaine brought almost 7 in. of rain to Taiwan. This rain flooded roads and low-lying areas, isolating many villages.

TYPHOON FAYE, AUGUST 22-SEPTEMBER 1

The first warning on tropical storm Faye was at 1200 on the 22d, but 48 hr. previous to this time the cyclonic circulation was evident. The storm formed near Eniwetok in a long trough that extended southeastward from Della. It moved northward at 9 kt. for the first 54 hr., steered by the elongated western portion of a High at 300 mb. When Faye reached 25°N., 160°E., it became quasi-stationary and intensified to typhoon strength by 1200 on the 25th. Its trajectory began to follow the 200 mb. flow, causing it to stop its northward movement and to begin moving southwestward.

Faye passed 75 mi. south of Marcus, as it began to move westward, and the maximum sustained winds reported there were 45 kt. At 0600 on the 28th a ship 150 mi. southwest of Faye reported only 20 kt. winds, while the reconnaissance fix reported maximum surface winds of 135 kt. This confirmed the fact that Faye was a small but intense typhoon. An east-west elongated High at 200 mb., to the north of the typhoon, caused it to move westward and then northwestward, during which time it passed midway between Iwo Jima and Peel Island.

Faye recurved northward around the western edge of the anticyclone at 200 mb., and passed 35 mi. west-southwest of Peel Island at 1100 on the 29th and 20 mi. east of Tori Shima at 0330 on the 30th. The maximum winds at Tori Shima were 45 kt. with a minimum pressure of 991 mb. By 0000 on the 30th the typhoon had begun to weaken, and the 300 mb. flow began to influence its trajectory, causing the storm to move north-northeastward instead of northward, thus eliminating any threat to Japan. By 0000 on September 1 it was evident that the storm had weakened and filled, and the final tropical warning was issued at 0600 by which time Faye had become extratropical. A total of 40 warnings were issued covering a period of 9 days, 18 hr. Faye moved at an average speed of 12 kt. during its "lifetime", its speed ranging from 1 kt. to 22 kt.

TYPHOON KIT, OCTOBER 2-13

Typhoon Kit developed in a large area of low pressure between the Philippines and Guam. At 1200 on the 2d the first tropical depression warning was issued, and the cyclone grew smaller in area and more intense as it developed into a typhoon. Kit reached typhoon strength by 1800 on the 4th. From the first warning, Kit followed a westward course, moving at 7 to 12 kt., roughly along 13°N. The storm passed between Samar and Catanduanes Islands in the Philippines and moved onto Legaspi Island, 200 mi. southeast of Manila, at 0900 on the 6th. It became somewhat weaker while over land, but accelerated slightly. The typhoon entered the South China Sea and began to re-intensify as it moved northwestward. At 1200 on the 10th, when it was 200 mi. southwest of Hong Kong, Kit again turned toward the west. The typhoon's wind speed steadily decreased as it passed the coastline of Hainan Island, and the final warning was issued at 0000 on the 13th when Kit, now a tropical storm, was 140 mi. southeast of Hanoi, North Vietnam.

Typhoon Kit followed the climatological track very well and is one of the few storms of the season that did. Warnings were issued for 10 days and 12 hr. over a distance of 1900 mi., and the cyclone traveled at an average rate of 7 to 8 kt. or 181 mi. per day. The cyclonic circulation of the typhoon appears to have extended through the 300 mb. level as a closed system. Kit damaged crops, roads, and private property in southern Luzon. The damage to crops alone was estimated at $3 million. The typhoon took the lives of more than 150 persons in central and southern Luzon and left 75,000 families homeless.

TYPHOON LOLA, OCTOBER 8-17

After typhoon Kit moved over the South China Sea, a small circulation began to develop in a trough near 20°N., 130°E. It was first noted at 0000 on the 8th, and by 1200 the circulation was intense enough to be classified as tropical storm Lola.

Lola initially moved toward Taiwan, but abruptly turned southward and accelerated from 4 to 15 kt. At 0600 on the 11th the storm was about 350 mi. northeast of Manila, and was upgraded to a typhoon. Shortly thereafter, Lola turned westward, and appeared to be headed toward Manila. The typhoon moved onto Luzon Island, 80 mi. northeast of Manila, at 0800 on the 13th, and passed about 20 mi. northeast of Clark Air Base. It appears that the circulation within the lower few thousand feet was weakened by the terrain, but the circulation reformed at the surface after Lola moved into the South China Sea. The typhoon weakened to tropical storm intensity by 1200 on the 15th, and passed 20 mi. south of Hainan Island and then into North Vietnam. The last warning was issued at 0600 on the 17th.

The average speed of movement of Lola was 9 kt. The storm moved toward Kit throughout its life except for the first 24 hr., when the track appeared to have been along the southeastern side of an anticyclone centered over the Asian mainland. Southerly tracks seldom appear east of the Philippines, and for this reason the track may be considered an unusual feature of the typhoon. Lola brought more floods to the Philippines. Damage to property and crops was estimated at $30 million, and 58 deaths were reported in the Philippines. Much of Manila, the capital, was under water, and people in surrounding towns and villages, for a period, faced starvation.

TYPHOON MAMIE, OCTOBER 13-21

A closed cyclonic circulation became evident at 1800 on the 10th near Kwajalein. When the first tropical depression warning was issued at 2200 on the 13th, the cyclone was more than 1300 mi. in diameter, encompassing an area of more than 1,300,000 sq. mi. By 1800 on the 17th the approximate area within the highest closed isobar of this fully-developed typhoon was 1,200,000 sq. mi. and the area of cyclonic circulation was twice that total.

Mamie moved along a northwestward track at 11 kt., with surface winds of 50 kt., passing 175 mi. northeast of Guam at 0000 on the 15th. Mamie became a typhoon by 1200 on the 15th, about 220 mi. north of Guam. The typhoon continued to a point near 20°N., 141°E., slowed to 3 kt., turned just east of north, and then accelerated rapidly to 24 kt. At 0600 on the 20th Mamie passed 275 mi. east-southeast of Tokyo, and the final tropical warning was issued 24 hr. later.

Mamie traveled about 1950 mi. from the first to the last warning and lasted 8 hr. longer than 1 week. The minimum speed was 3 kt., the maximum speed 24 kt., and the average speed 11 kt. Mamie was the largest typhoon of the 1960 season. To picture the area influenced by this typhoon, consider that the surface circulation was cyclonic, covering an area bounded by Japan, the Philippines, Truk, Marcus, and then Japan. It caused winds of 75 kt. on the island of Hachijo and powerful gusts whipped tiles off roofs at Oshima and churned up waves 18-20 ft. high. Mamie brought winds of 90 kt. to Iwo Jima.

TYPHOON NINA, OCTOBER 23-27

Typhoon Nina formed between the Philippines and Guam, southwest of Mamie. At 0000 on the 23d the first tropical depression warning was issued. Previous to the time of the first warning, the cyclone had moved slowly westward and northwestward, but at the time of the first warning it had just started recurving approximately 600 mi. east of the Philippines. Recurvature was completed 24 hr. later, and at that time Nina reached typhoon intensity. The maximum surface winds steadily increased until they reached 110 kt. by 0000 on the 26th. Nina was then 350 mi. west of Iwo Jima. After recurvature Nina traveled in an almost straight line along a course of roughly 030°(NNE.).

The typhoon passed to the west and within 20 mi. of Tori Shima at 1730 on the 26th. The pressure dropped to 954 mb. at this station, but the surface winds did not exceed 40 kt. because the station is well protected against high winds from a southerly direction. Nina was moving at 56 kt. at 1800 on the 27th when the final tropical warning was issued. The "warning life" of Nina was 4 days, 18 hr., and the typhoon traveled 2200 mi. at an average speed of 19 kt.

TYPHOON OPHELIA, NOVEMBER 21-DECEMBER 6

A small Low, which developed south of Kawajalein, gradually intensified and moved westward, and at 1200 on the 21st, when the cyclone was southwest of Eniwetok, the first tropical depression warning was issued. Shortly after the first warning was issued, the system began to weaken, and warnings were discontinued at 0600 on the 24th.

Warnings were resumed at 0000 on the 27th when the cyclone was northwest of Truk and 300 mi. southeast of Guam. The depression increased to tropical storm intensity by 1800 on the 27th and to typhoon intensity by 0000 on the 29th. Ophelia's speed of movement increased from 2 kt. at 0000 on the 27th to 17 kt. at 0600 on the 29th, when the storm was 250 mi. south of Guam. The track followed a semi-sinusoidal pattern, and the typhoon passed directly over Ulithi Atoll at 0300 on the 30th. The pressure was reported to have reached a minimum of 939.4 mb. and maximum gusts were estimated to have been 125 kt. Ophelia moved northwestward to a point 500 mi. east of Catanduanes Island at 1200 on the 1st and began to turn northward. The typhoon continued on this northerly track for about 2 days before completing its recurvature.

Ophelia moved northeastward and accelerated rapidly as it was influenced by very strong southwesterly winds above the 500 mb. level. On December 5 typhoon Ophelia moved approximately 1275 mi. at an average speed of 53 kt. The typhoon was classified as extratropical at 0600 on the 6th, when the final tropical warning was issued. Ophelia traveled 5000 mi. at an average speed of 13 kt. The minimum speed was 2 kt. on November 22, 27, and 28, and the maximum speed was 65 kt. during a 6 hr. period on December 5. Ophelia passed directly over Ulithi, and did extensive damage to the Island. The airstrip was covered with coconut palms and sand which briefly prevented any plane from landing on the atoll. All buildings, except a concrete U.S. Coast Guard Loran station and a church, were severely damaged by the typhoon. The typhoon put Ulithi under 2 ft. of water, and 2 children died on the Island. A number of coconut palms snapped, which appears to support the estimate of gusts of 125 kt.

TYPHOON PHYLLIS, DECEMBER 11-20

A cyclonic circulation was evident about 100 mi. west of Truk on the 0600 surface chart on December 9. This system moved slowly westward, and at 0000 on the 11th the initial tropical depression warning was issued. The depression moved west-northwestward for the first 60 hr. that warnings were issued. Phyllis moved at an average speed of 15 kt. during this period, a relatively fast speed for a tropical disturbance in low latitudes. Examination of the 300 mb. charts from 1200 on the 10th to 1200 on the 13th indicates a stronger than usual north-south gradient throughout this region. This undoubtedly accounts for the higher-than-normal speed.

Phyllis, upgraded to a tropical storm at 0000 on the 12th, passed 40 mi. north of Ulithi at 0730 on the 12th. The maximum reported wind speed of 20 kt. and a minimum pressure of 998.3 mb. at Ulithi indicated that Phyllis was still a small storm. After passing Ulithi, Phyllis rapidly intensified, reaching typhoon strength by 0000 on the 13th. As the anticyclone at 200 mb. to the north of Phyllis split into 2 cells, the typhoon moved north into a col area. During the period 0000 on the 14th to 0000 on the 15th Phyllis moved at an average speed of only 3 kt., and recurvature appeared imminent. However, by 0600 on the 15th Phyllis was again moving to the west-northwestward, and it was not until 1200 on the 17th that Phyllis began actual recurvature. Phyllis recurved quite abruptly, changing track from 300° to 080° (WNW to E) between 1200 on the 17th and 1800 on the 18th.

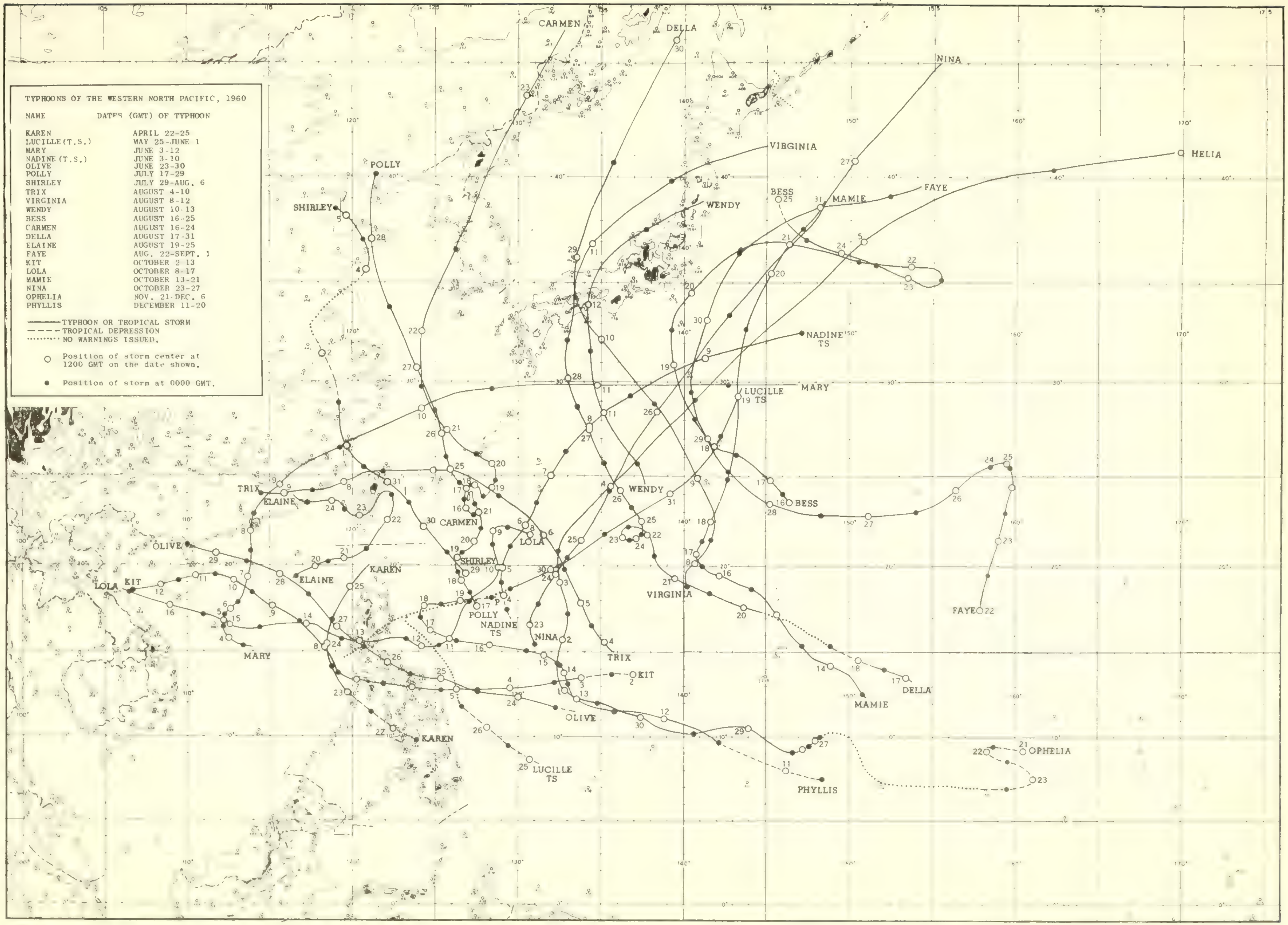
A cold front was located 300 mi. north of Phyllis at 1200 on the 18th, and it moved southward as the typhoon moved eastward. This front brought cold air into the typhoon and caused it to rapidly weaken and become extratropical. The 2330 reconnaissance fix on the 18th reported maximum sustained winds of 110 kt. However, the 2325 fix on the 19th could not find winds of more than 15 kt., and only a poorly-defined center was discernible. A total of 37 warnings were issued covering a period of 9 days. The final warning was issued at 0000 on the 20th.

EDITOR's NOTE: Figure 2 shows the tracks and lists the named tropical storms and tropical depressions which occurred in the western North Pacific in 1960 and were not described in the above article.

TYPHOONS OF THE WESTERN NORTH PACIFIC, 1960

Name	Dates during Period of Typhoon Winds (GMT)	Islands and Coasts Seriously Affected	Values and Dates (GMT) of:		
			Highest Surface Wind Speed[1] (kt.)	Lowest Surface Pressure[1] (mb.)	Lowest 700-mb Height[1] (ft.)
KAREN	4/24-25	Philippines	75/25	988/25	9940/25
LUCILLE (T.S.)	---	Philippines	45/31-01[a]	Unknown[a]	Unknown[a]
MARY	6/07-08 6/10-11	Hong Kong, China, Taiwan	80/08[a]	975/08[a]	9500/08[a]
NADINE (T.S.)	---	---	60/08	991/08	---
OLIVE	6/24-27 6/28-30	Philippines, China	100/25	950/25	8800/25
POLLY	7/19-28	Ryuku Islands	125/20,21	952/21	8630/21
SHIRLEY	7/30-8/02	Taiwan, China	130/30,31	---	7510/30
TRIX	8/05-09	Ryuku Islands, Taiwan, China	130/07	918/06	8130/06
VIRGINIA	8/09-10	Iwo Jima, Japan	100/10	971/10	9590/10
WENDY	8/11-12	Ryuku Islands, Japan	75/11	986/11	9960/11
BESS	8/19-23	Japan	60/20-22	978/20	9500/21
CARMEN	8/17-20	Ryuku Islands, Korea	75/18	970/18	9420/19
DELLA	8/22-30	Japan	100/26	962/24	9170/28
ELAINE	8/21-22	Taiwan, China	80/22	976/22	9610/22
FAYE	8/25-30	---	135/28	940/28	8570/28
KIT	10/04-11	Philippines,Hainan	100/06	966/06	9200/06
LOLA	10/11-15	Philippines	80/13	978/12	9600/12
MAMIE	10/15-20	---	150/19	940/18	8420/18
NINA	10/24-27	---	120/26	954/25	8810/26
OPHELIA	11/24-12/05	Ulithi	175/01	928/03	7960/03
PHYLLIS	12/13-19	---	110/18	962/18	9110/18

[1] Values reported by reconnaissance aircraft.
[a] Estimated - no reconnaissance performed.



TYPHOONS OF THE WESTERN NORTH PACIFIC, 1960

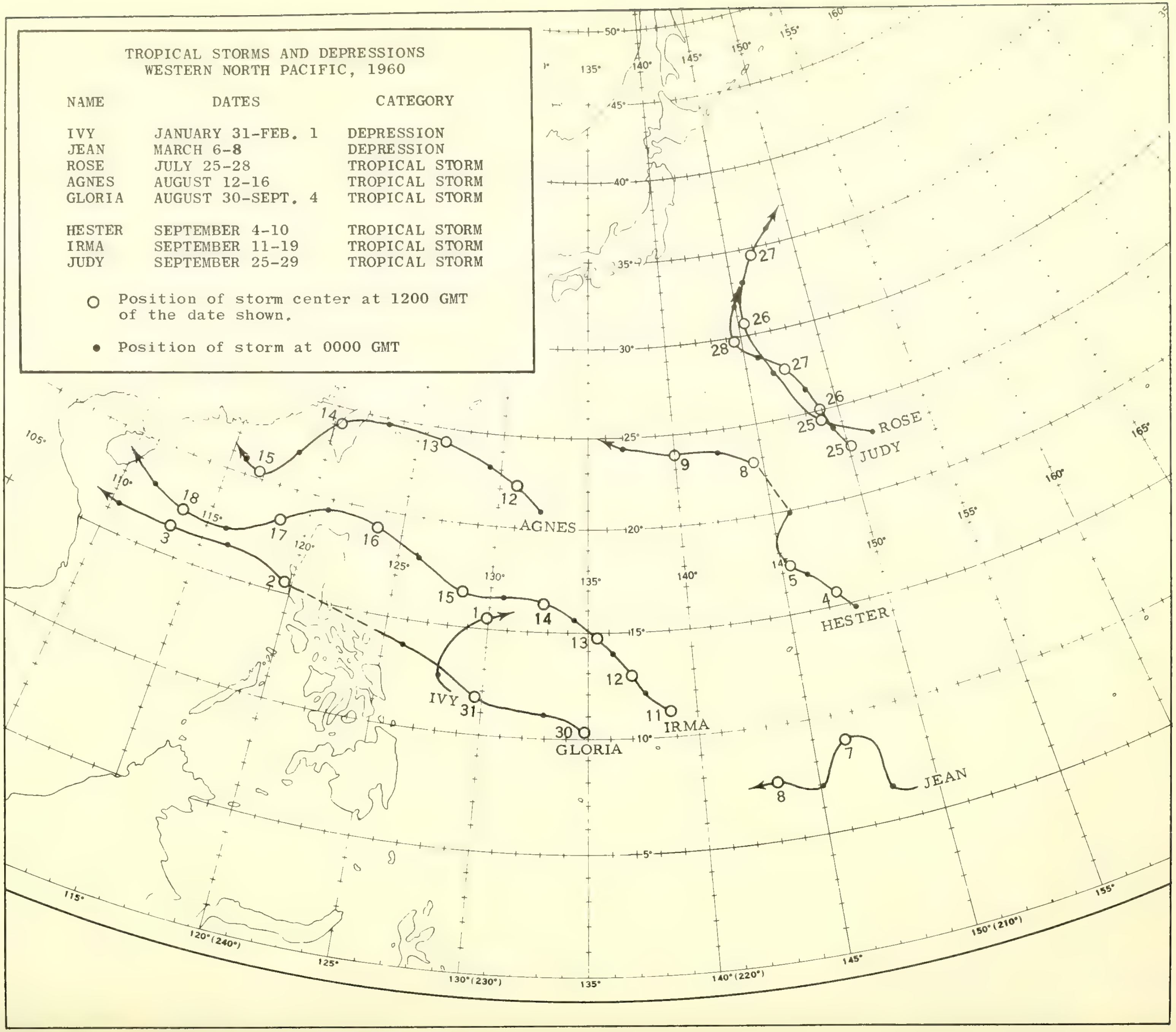
NAME	DATES (GMT) OF TYPHOON
KAREN	APRIL 22-25
LUCILLE (T.S.)	MAY 25-JUNE 1
MARY	JUNE 3-12
NADINE (T.S.)	JUNE 3-10
OLIVE	JUNE 23-30
POLLY	JULY 17-29
SHIRLEY	JULY 29-AUG. 6
TRIX	AUGUST 4-10
VIRGINIA	AUGUST 8-12
WENDY	AUGUST 10-13
BESS	AUGUST 16-25
CARMEN	AUGUST 16-24
DELLA	AUGUST 17-31
ELAINE	AUGUST 19-25
FAYE	AUG. 22-SEPT. 1
KIT	OCTOBER 2 13
LOLA	OCTOBER 8-17
MAMIE	OCTOBER 13-21
NINA	OCTOBER 23-27
OPHELIA	NOV. 21-DEC. 6
PHYLLIS	DECEMBER 11-20

——— TYPHOON OR TROPICAL STORM
- - - - TROPICAL DEPRESSION
········ NO WARNINGS ISSUED.

○ Position of storm center at 1200 GMT on the date shown.

● Position of storm at 0000 GMT.

Fig. 1



TROPICAL STORMS AND DEPRESSIONS
WESTERN NORTH PACIFIC, 1960

NAME	DATES	CATEGORY
IVY	JANUARY 31-FEB. 1	DEPRESSION
JEAN	MARCH 6-8	DEPRESSION
ROSE	JULY 25-28	TROPICAL STORM
AGNES	AUGUST 12-16	TROPICAL STORM
GLORIA	AUGUST 30-SEPT. 4	TROPICAL STORM
HESTER	SEPTEMBER 4-10	TROPICAL STORM
IRMA	SEPTEMBER 11-19	TROPICAL STORM
JUDY	SEPTEMBER 25-29	TROPICAL STORM

○ Position of storm center at 1200 GMT of the date shown.

● Position of storm at 0000 GMT

Fig. 2

GENERAL SUMMARY OF FLOOD LOSSES FOR 1959

Monetary losses from floods in the United States during 1959, estimated at $141, 254, 500 was the lowest flood loss since 1956. In comparison with 1958, it was about one-third less. The national average, based on the 10-year period 1949-1958 (adjusted to the 1958 price index) is $350, 000, 000. In comparison with the national average, the loss in 1959 was about 40%. The total loss of life in 1959 was 25, compared to 47 in 1958, 42 in 1956 and 302 in 1955. It was considerably smaller than the national average of 83 lives lost during the last 35 years (1925-1959). The savings resulting from the flood forecasting and warning service was, as compiled from fragmentary information, approximately $17, 000, 000 -- this figure represents only 10% of the river systems where flooding occurred during the year.

The most important flooding during 1959 occurred in January in the Ohio Basin. Record to near record stages occurred along several streams in southeastern Indiana, Ohio and Pennsylvania. The flooding in the Whitewater Basin in Indiana and in the Scioto Basin in Ohio was generally the highest since 1913. The flooding along the East Fork of the White River in Indiana was the worst in a decade. Previous maximum stages in the Beaver River and the upper Allegheny River Basin in Pennsylvania were equalled or exceeded. Extensive and serious flooding occurred along the entire length of the Sandusky River in Ohio with near record stages in the headwaters. Severe local flooding occurred along small streams in the Cleveland, Ohio, area. Severe flash floods occurred on several small streams in Erie County in New York.

ESTIMATED FLOOD LOSSES FOR 1959 (PROPERTY LOSSES IN THOUSANDS OF DOLLARS)

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
ST. LAWRENCE DRAINAGE																
Lake Erie																
Maumee River	138.0	22.0	62 3	....	143 6	....	....	....	1.0	....	18.5	....	7.0	....	392.4	....
Sandusky River	A 1,189.8	....	B 1,522 0	....	....	....	....	....	....	....	....	....	....	C 318.3	D 3,030.1	....
Huron River	A 130.1	....	B 8.4	....	....	....	....	....	....	....	....	....	....	C 8.0	D 146.5	....
Vermillion River	A 100 5	....	B 119.9	....	....	....	....	....	....	....	....	....	....	C 278.8	D 499.2	....
Black River	A 12.5	....	B 110.0	....	....	....	....	....	....	....	....	....	....	C 87.5	D 210.0	....
Rocky River	A 86.9	....	B 103.1	....	....	....	....	....	....	....	....	....	....	C 291.0	D 481.0	....
Cuyahoga River	A 155.0	....	B 2,002.0	....	....	....	....	....	....	....	....	....	....	C 139.7	D 2,296.7	....
Chagrin River	A 244.6	....	B 21.5	....	....	....	....	....	....	....	....	....	....	C 51.3	D 317.4	....
Grand River	A 44.5	....	B 5.0	....	....	....	....	....	....	....	....	....	....	C 6.5	D 56.0	....
Ashtabula River	A 62.0	....	....	....	....	....	....	....	....	....	....	....	....	C 9.0	D 71.0	....
Conneaut Creek	A 1.0	....	B 50.0	....	....	....	....	....	....	....	....	....	....	C 2.0	D 53.0	....
Walnut Creek	A 10.5	....	B 11.3	....	....	....	....	....	....	....	....	....	....	C 1.0	D 22.8	....
Cattaraugus Creek	A 17.2	....	....	....	....	....	....	....	....	....	....	....	....	C 2.0	D 19.2	....
Smokes Creek	A 629.5	....	B 100.7	....	....	....	....	....	....	....	....	....	....	C 84.6	D 814 8	....
Buffalo River	A 240.5	....	B 857.1	....	....	....	....	....	....	....	....	....	....	C 3,085.5	D 4,183.1	....
Total	3,062.6	22.0	4,973.3	....	143.6	....	....	....	1.0	....	18.5	....	7.0	4,365.2	12,593.2	0
Lake Ontario																
Niagara River	A 49.4	....	B 7.6	....	....	....	....	....	....	....	....	....	....	C 6.0	D 63.0	....
Canaseraga Creek	....	....	....	....	....	11.0	....	....	....	....	....	....	....	....	11.0	....
Seneca River	A 50.7	....	B 23 8	....	....	....	....	....	....	....	....	....	....	C 4.0	D 78.5	....
Total	100.1	....	31.4	....	....	11.0	....	....	....	....	....	....	....	10.0	152.5	0
ATLANTIC SLOPE DRAINAGE																
Narraguagus River (Maine)	10.0	10.0	20.0	10.0	....	....	....	0.1	0.5	....	10.0	....	....	....	60.6	....
Pemigewasset River and Tributaries	....	....	....	....	....	....	....	....	....	....	4,000 0	....	....	500.0	4,500.0	....
Ausable River (New York)	....	....	....	....	....	....	....	....	....	....	....	....	....	10.0	10.0	....
Tioughnioga River	129.5	....	8.0	....	....	....	....	....	....	....	....	....	....	....	D 137.5	....
Chenango River	183.2	....	38.5	....	1.5	....	....	....	....	....	....	....	....	....	D 223.2	....
Chemung River	5.5	....	....	....	....	....	....	....	....	....	25.0	....	....	....	D 30.5	....
West Branch Susquehanna River	150.0	65.0	115.0	105.0	275.0	16.0	10.0	4.0	47.0	25 0	80.0	45.0	100.0	....	1,037.0	....
Susquehanna River	222.0	80.0	126.5	105.0	125.0	15.0	20.0	....	60.0	50.0	80.0	50.0	20.0	....	953.5	....
Tar River	....	....	....	....	....	7 5	....	....	....	....	45.0	....	....	....	52.5	....
Neuse River	10.0	3.0	....	....	5.0	20.0	....	2.5	5.0	0.5	150.0	....	5.0	....	201.0	....
Haw River and Tributaries	....	2.5	....	....	5.0	5.0	....	....	....	....	240.0	....	....	....	252.5	....
Pacolet River	....	....	....	....	12.0	....	....	....	....	....	....	....	....	....	12.0	....
Santee River and Tributaries	....	....	....	....	....	61.2	....	0.4	2.5	....	32.2	....	16.3	....	112.6	....
Total	710.2	160.5	308 0	220.0	423 5	124.7	30.0	7.0	115.0	75.5	4,662.2	95.0	141.3	510.0	7,5[illegible]9	0
EAST GULF OF MEXICO DRAINAGE																
Suwannee and Santa Fe Rivers	70.5	....	....	....	....	35.0	....	....	....	....	37.0	....	....	....	142.5	....
Choctawhatchee River	....	....	....	....	....	....	....	1.0	....	....	3.0	2.0	1.0	....	7.0	....
Pascagoula River and Tributaries	5.0	2.0	1.0	2.0	7.5	5.0	....	2.0	5.0	1.0	15.0	1.0	3.5	....	50.0	....
Pearl River	....	....	....	....	....	....	....	....	....	....	41.0	....	....	....	41.0	....
Total	75.5	2.0	1.0	2.0	7.5	40.0	....	3.0	5.0	1.0	96.0	3.0	4.5	....	240.5	0
MISSISSIPPI SYSTEM																
Upper Mississippi Basin																
Trempealeau River	4.0	1.3	1.8	0.9	1.0	4.6	....	....	....	....	1.5	1.5	1.0	....	17.6	....
Root River	....	....	....	....	....	42.0	....	....	1.0	....	3.5	2.5	1.0	....	50.0	....
Kickapoo River	45.6	15.7	20.3	10.1	11.4	15.6	20.0	....	5.0	....	8.1	8.0	3.0	....	162.8	....
Wisconsin River and Tributaries	1.0	0.5	....	....	....	8.5	....	....	....	....	1.5	1.5	1.0	....	14.0	....
Turkey River	....	....	....	....	....	9.3	0.3	1.5	....	....	29.5	....	0.8	....	41.4	....
Galena River and Tributaries	....	....	....	....	....	0.5	....	....	0.7	....	3.0	....	....	....	4.2	....
Wapsipinicon River	2.0	....	....	5.0	8.0	3.3	1.0	1.0	1.0	....	20.2	....	0.1	....	41.6	....
Rock River	E 231.6	....	....	....	....	F 964.6	....	....	....	....	....	....	410.5	....	D 1,606.7	6
Des Moines River and Tributaries	..No damage	estimates	available	....	....	....	....	....	....	....	....	....	....	....	....	2
Kankakee River	20.0	....	....	....	5.0	....	....	....	....	....	2.0	....	10.0	....	37.0	....
Sangamon River	30.0	1.0	....	....	....	365.0	25.0	....	....	....	2.0	....	....	....	423.0	....
Flash Flooding - Small Streams in Illinois River Basin	E 830.0	....	....	....	....	50.0	....	....	....	....	....	....	....	....	880.0	....
Illinois River	....	....	....	....	15.0	25.0	10.0	....	10.0	10.0	40.5	....	....	....	110.5	....
Kaskaskia River	2.0	....	....	....	10.0	19.5	....	....	1.0	1.0	5.0	....	....	....	38.5	....
Total	1,166.2	18.5	22.1	16.0	50.4	1,507.9	56.3	2.5	18.7	11.0	116.8	13.5	427.4	....	3,427.3	8

See reference notes at end of table.

ESTIMATED FLOOD LOSSES FOR 1959 (PROPERTY LOSSES IN THOUSANDS OF DOLLARS)

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
Missouri Basin																
Gallatin River	1.4	0.2		0.2				2.0			1.3		0.2		5.3	
Jefferson River							0.6	7.0							7.6	
Clark Fork (Montana)			2.5					2.5	2.0				0.5		7.5	
Yellowstone River	10.0	3.0		5.0			0.8		3.7	0.5			2.0		25.0	
Heart River		2.0	5.0	2.0					2.0		1.0		13.0		25.0	
Big Sioux and Rock Rivers						30.0									30.0	
Floyd River						15.0									15.0	
Skull Creek Basin (Nebraska)	E 55.0					79.1					43.8				177.9	
Wahoo Creek Basin (Nebraska)	E 218.7					F 683.4					94.4	10.2			1,006.7	
Papillion Creek Basin (Nebraska)	E 572.6					F 390.7					119.7			6.5	1,089.5	
Baker Creek (near Sterling, Nebr.)																2
Nodaway River						30.5					G 15.1		8.0		D 53.6	
Platte River (Missouri)						44.9					G 11.3		3.0		D 59.2	
Smoky Hill River and Tributaries	140.8		23.4		6.0	94.5					G 10.0		1.0		D 275.7	
Black Vermillion River	A 103.0		B 149.0		108.0	66.8					G 22.9		12.0		D 461.7	
Vermillion Creek (near Wamego, Kans.)						11.5					G 0.3				D 11.8	
Grand River and Tributaries	A 4.2		B 11.4		25.0	3,269.2					G 146.0		4.7		D 3,460.5	
Chariton River						764.5					G 29.9		2.7		D 797.1	
Big Bull Creek (Kansas)						36.5					G 16.3				D 52.8	
Sac River						70.0									70.0	
South Grand River						12.0	1.0			2.0					15.0	
Osage River and Tributaries						17.0					G 1.7				18.7	
Missouri River and Minor Tributaries	A 142.6		B 191.3		15.0	3,933.4		3.3	30.0		G 176.8		4.0		D 4,496.4	1
Total	1,248.3	5.2	382.6	7.2	154.0	9,549.0	2.4	14.8	37.7	2.5	690.5	10.2	51.1	6.5	12,162.0	3
Ohio Basin																
Allegheny River	1,834.7	668.0	2,389.7	1,535.3	769.4	8.1	4.0	1.0	68.3	8.0	487.9	339.9	1,795.8	100.0	10,010.1	
Muskingum River	556.0	147.0	246.2	125.6	494.8	3.0	2.0	1.0	65.0	1.9	403.0	22.3	86.5		2,154.3	
New River and Tributaries	5.0				8.0	12.1			1.5		2.0				28.6	
Scioto River and Tributaries	A20,623.0														20,623.0	
Little Miami River	1,000.0	501.0	900.0	243.0	241.0	139.0	22.0	11.0	257.0	72.0	46.0	15.0	42.0		3,489.0	1
Mill Creek (Cincinnati, Ohio, area)	400.0	327.0	407.0	770.0	50.0		2.0	1.0	20.0	1.0	50.0	20.0	30.0		2,078.0	
Whitewater River	1,307.0	800.0	1,000.0	500.0	500.0	124.0	15.0	65.0	100.0	65.0	400.0	50.0	150.0		5,076.0	
Miami River	2,500.0	1,100.0	1,400.0	1,300.0	460.0	110.0	90.0	25.0	600.0	115.0	140.0	45.0	135.0		8,020.0	4
Wabash and White Rivers	A 1,015.0								D3,515.0		931.0		1,500.0		6,961.0	
Ohio and Green Rivers and Minor Tributaries	1,700.4	2,399.8	4,585.4	3,570.8	1,252.4	144.8	52.8	33.8	208.8	86.2	698.4	380.0	6,928.1	2,021.5	24,063.2	3
Total	30,941.1	5,942.8	10,928.3	8,044.7	3,775.6	541.0	187.8	137.8	4,835.6	349.1	3,158.3	872.2	10,667.4	2,121.5	82,503.2	8
Arkansas Basin																
Walnut Creek and Tributaries (Kansas)	372.0	39.0	178.0	53.0		230.0	40.0	10.0	160.0		108.0		195.0		1,385.0	
Walnut River					0.5	75.0					2.5				78.0	
Chikaskia River and Tributaries					15.0	150.0	2.0	2.0	10.0	8.0	45.0		24.5		256.5	
Cimarron River and Tributaries	34.0	704.5	50.0	15.0	923.3	200.0	40.0	1.0	60.0	9.0	1,000.0	60.0	10.0		3,106.8	
Verdigris River and Tributaries	1.0	2.0			34.5	382.0	2.0	6.0	34.0	10.0	80.0		28.5		580.0	
Cottonwood River	5.0				3.0	5.0			10.0	30.0	60.0				113.0	
Pryor Creek (Mayes County, Okla.)						57.4		5.4	20.0	4.0	25.0		12.0		123.8	
Neosho River					2.0										2.0	
Okmulgee Creek (Okmulgee, Okla.)	E 9.0														9.0	
North Canadian River			10.0		61.0	244.0			34.0	12.0					361.0	
Canadian River					260.0	9.0			0.7	0.3					270.0	
Arkansas River	937.0	305.0	100.0	200.0	160.0	4,314.9	25.0	24.0	128.0	29.0	211.2		167.0		6,601.1	
Total	1,358.0	1,050.5	338.0	268.0	1,459.3	5,667.3	109.0	48.4	456.7	102.3	1,531.7	60.0	437.0		12,886.2	2
Red Basin																
Washita River					7.0	745.0	1.5	0.3	126.0	0.2					880.0	
Total					7.0	745.0	1.5	0.3	126.0	0.2					880.0	0
Lower Mississippi Basin																
St Francis River						10.0									10.0	
Big Black River						189.0									189.0	
Total						199.0									199.0	0
WEST GULF OF MEXICO DRAINAGE																
Small streams in Rusk County, Tex.	200.0	60.0	75.0	70.0	140.0	80.0	25.0	2.0		12.8	300.0	40.0			1,004.8	3
Trinity River	125.0	76.0	75.0	50.0		200.0		1.0	76.0	5.0	150.0		100.0		858.0	
San Antonio River and Tributaries	1.5	1.0			15.0	1.0			0.5						19.0	
Guadalupe River and Tributaries	35.0	10.0			40.0	40.0		20.0	50.0	50.0	5.0	3.0	3.0		256.0	1
Nueces River and Tributaries	31.0	11.0	10.0	5.0	26.0	250.0	10.0	75.0	25.8	10.0	250.0	10.0	30.5		744.3	
Rio Grande River						1.0					3.0				4.0	
Total	392.5	158.0	160.0	125.0	221.0	572.0	35.0	98.0	152.3	77.8	708.0	53.0	133.5		2,886.1	4

See reference notes at end of table.

ESTIMATED FLOOD LOSSES FOR 1959 (PROPERTY LOSSES IN THOUSANDS OF DOLLARS)

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
GULF OF CALIFORNIA DRAINAGE																
Colorado Basin																
Arroyo's in Maricopa County, Ariz...	....	....	....	....	....	....	....	....	....	....	100.0	....	....	....	100.0	....
Total	....	....	....	....	....	....	....	....	....	....	100 0	....	....	....	100.0	0
GREAT BASIN																
Streams in Southwestern Garfield County, Utah......................	....	....	....	....	....	....	....	....	....	....	3.8	....	....	....	3.8	...
Total	....	....	....	....	....	....	....	....	....	....	3.8	....	....	....	3.8	0
PACIFIC SLOPE DRAINAGE																
Coastal Streams																
Eel River (California).............	....	....	....	....	....	......4.0	....	....	....	....	....	....	....	....	4.0	....
Coquille River (Oregon)........	....	....	....	....	....	....	....	....	....	....	20.0	....	....	....	20.0	....
Total	....	....	....	....	....	4.0	....	....	....	....	20.0	....	....	....	24.0	0
Columbia Basin																
Cottonwood Creek (Boise, Idaho).....	500.0	....	....	....	....	....	....	....	....	....	....	....	....	....	500.0	....
Yakima and Cowlitz Rivers...........	5.0	2.0	....	....	5.0	....	....	....	17.5	2.5	40.0	5.0	....	....	77.0	....
Total	505.0	2.0	....	....	5.0	....	....	....	17.5	2.5	40.0	5.0	....	....	577.0	0
Washington Coastal Basins																
Green, Snohomish, Stillaguamish and Skagit Rivers in King, Snohomish and Skagit Counties...............	132.2	....	....	....	700.0	600.0	70.0	....	87.5	....	2,905.0	....	542.1	....	5,036.8	....
Total	132.2	....	....	....	700.0	600.0	70.0	....	87.5	....	2,905.0	....	542.1	....	5,036.8	....
Grand Total	39,691.7	7,361.5	17,144.7	8,682.9	6,946.9	19,560.9	492.0	311.8	5,853.0	621.9	14,050.8	1,111.9	12,411.3	7,013.2	141,254.5	25

A. Includes all residential
B. Includes all commercial
C. Includes public utilities, public property, streets and highways
D. By U.S. Engineers
E. Includes all urban
F. Includes all rural
G. Includes public utilities

LOSS OF LIFE AND PROPERTY IN THE UNITED STATES FROM FLOODS

Property Losses in Thousands of Dollars
BY DISTRICTS AND YEARS, 1925-1959

District	1925		1926		1927		1928		1929		1930		1931	
	Life	Property	Life	Property	Life	Property	Life	Property	Life	Property	Life	Property	Life	Property
Great Lakes-----------	---	--------	---	19	48	15,750	---	--------	---	171	---	36	---	1
North Atlantic--------	---	50	---	137	40	29,408	3	2,105	---	245	---	--------	---	1,050
South Atlantic--------	---	2,999	---	--------	---	1	5	8,382	8	10,196	---	--------	---	31
East Gulf-------------	2	615	---	37	8	255	---	2,428	5	8,746	---	466	---	174
Ohio Valley-----------	---	33	2	5,523	94	15,639	4	10,279	34	17,050	---	7,042	---	1
Upper Mississippi-----	14	3,983	1	5,435	---	19,612	---	1,173	---	3,677	---	15	---	20
Lower Mississippi-----	---	115	---	42	100	133,898	---	7,819	4	9,980	---	530	---	--------
Missouri--------------	---	--------	6	1,434	1	4,880	2	6,714	13	2,118	---	13	---	886
Arkansas--------------	---	224	6	8,938	132	26,183	1	4,349	12	7,516	---	213	---	6
Red-------------------	---	--------	1	155	---	100,908	---	153	1	100	14	3,616	---	19
West Gulf-------------	6	1,436	---	301	---	208	---	75	---	8,124	---	924	---	2
Colorado--------------	---	--------	---	447	---	12	---	100	12	175	---	--------	---	3
Pacific---------------	14	468	---	--------	---	902	---	1,032	---	--------	---	--------	--	560
Miscellaneous east of Rockies------------	---	--------	---	1,000	---	--------	---	--------	---	--------	---	2 500	---	--------
Miscellaneous west of Rockies------------	---	--------	---	--------	---	--------	---	--------	---	--------	--	495	---	55
Total	36	9,923	16	23,468	423	347,656	15	44,611	89	68,098	14	15,850	- -	2,808

District	1932		1933		1934		1935		1936		1937		1938	
Great Lakes-----------	---	1	---	14	---	--------	---	13,185	1	9	---	690	---	240
North Atlantic--------	---	25	2	5,418	---	142	52	16,340	24	146,035	---	2,689	8	37,068
South Atlantic--------	---	191	---	19	---	240	---	77	2	2,391	---	989	---	455
East Gulf-------------	---	615	---	444	---	13	---	719	---	1,240	---	357	---	1,655
Ohio Valley-----------	---	288	5	7,725	2	928	5	8,536	82	122,296	65	413,936	8	4,481
Upper Mississippi-----	---	88	4	1,157	12	1,023	---	1,506	---	313	3	1,127	2	3,659
Lower Mississippi-----	---	1,840	---	6,933	---	--------	17	6,631	---	55	72	6,657	---	1
Missouri--------------	---	451	2	1,391	6	1,906	125	38,959	---	109	2	1,367	71	4,333
Arkansas--------------	---	2,528	---	776	---	18	4	8,344	6	817	---	1,557	---	2,202
Red-------------------	---	516	---	38	22	640	8	2,751	---	16	---	24	---	755
West Gulf-------------	11	3,522	---	1,160	---	422	20	29,522	24	8,376	---	1,830	6	6,003
Colorado--------------	---	13	---	--------	1	22	---	--------	---	--------	---	264	---	256
Pacific---------------	---	217	20	11,604	45	5,008	5	557	3	892	---	9,245	85	39,990
Total	11	10,295	33	36,679	88	10,362	236	127,127	142	282,549	142	440,738	180	101,098

District	1939		1940		1941		1942		1943		1944		1945	
Great Lakes-----------	---	11	2	--------	---	--------	---	153	1	9,564	---	130	---	119
North Atlantic--------	2	56	4	2,519	---	--------	35	22,321	4	1	---	--------	3	5,729
South Atlantic--------	---	454	12	5,034	---	89	---	608	---	152	---	1,926	3	1,007
East Gulf-------------	1	6,680	---	5,497	---	24	2	155	---	773	---	2,660	---	268
Ohio------------------	80	3,773	28	8,077	---	1,122	16	16,546	44	31,416	---	806	27	52,887
Upper Mississippi-----	---	228	---	199	---	3,018	1	5,592	16	42,097	7	27,031	---	9,288
Lower Mississippi-----	---	1,448	---	--------	---	--------	---	475	---	829	---	1,550	---	3,601
Missouri--------------	---	610	5	1,759	2	12,019	1	22,511	13	62,630	13	44,616	4	34.403
Arkansas--------------	---	179	2	1,332	9	13,346	---	6,577	26	41,850	10	11,171	20	15,068
Red-------------------	---	22	---	12	---	1,855	---	2,205	---	44	---	1,676	6	22,209
West Gulf-------------	---	360	7	7,622	34	5,458	2	12,489	---	2,589	3	8,938	4	10,987
Colorado--------------	---	13	---	180	2	1,061	---	3	---	310	---	575	10	182
Pacific---------------	---	--------	---	8,236	---	1,532	11	8,872	3	7,477	---	--------	14	9,530
Great Basin-----------	---	--------	---	--------	---	--------	---	--------	---	--------	---	--------	---	520
Total	83	13,834	60	40,467	47	39,524	68	98,507	107	199,732	33	101,079	91	165,798

District	1946		1947		1948		1949		1950		1951		1952	
Great Lakes-----------	---	251	1	5,761	4	20,270	---	1,619	9	33,542	---	131	---	2,350
North Atlantic--------	14	8,500	---	198	4	12,467	11	9,273	2	7,149	1	916	5	1,222
South Atlantic--------	---	172	---	944	1	1,372	3	291	---	1,203	---	9	---	236
East Gulf-------------	---	2,963	2	654	---	3,122	---	1,747	---	1,435	---	4,310	---	347
Ohio------------------	---	10,914	5	7,812	16	16,871	7	4,754	50	25,195	1	4,889	14	4,940
Upper Mississippi-----	4	8,642	27	87,937	---	2,905	---	406	2	11,060	6	71,799	7	22,439
Lower Mississippi-----	---	4,407	1	2,555	---	5,390	---	10,020	6	10,071	---	5,996	---	444
Missouri--------------	---	8,305	18	163,176	1	31,490	6	33,503	18	35,090	31	889,872	8	181,335
Arkansas--------------	---	1,791	1	1,424	14	18,721	---	6,696	---	8,294	10	44,331	---	5
Red-------------------	---	1,434	---	1,446	---	220	2	365	1	1,105	---	2,101	---	836
West Gulf-------------	10	15,967	---	330	1	4,604	18	22,462	---	417	---	238	10	9,584
Colorado--------------	---	--------	---	3	---	1	---	155	---	--------	---	889	---	76
Pacific---------------	---	7,367	---	88	37	111,826	1	2,640	5	37,362	2	3,260	10	20,251
Great Basin-----------	---	100	---	--------	---	--------	---	--------	---	4,127	---	--------	---	9,999
Total	28	70,813	55	272,328	82	229,959	48	93,931	93	176,050	51	1,028,741	54	254,064

District	1953		1954		1955		1956		1957		1958		1959	
Great Lakes-----------	1	2,654	---	15,000	---	2,596	---	1,327	1	1	---	10	---	12 746
North Atlantic--------	1	10,637	11	7,337	211	761,303	11	1,453	---	11	---	167	---	6,952
South Atlantic--------	---	109	1	546	2	902	3	2,720	---	166	---	3,917	---	631
East Gulf-------------	2	2,444	---	543	6	5,300	1	1,379	---	4,526	---	3,434	---	241
Ohio------------------	5	778	9	18,594	15	14,645	12	17,836	25	135,972	10	68,248	8	82,503
Upper Mississippi-----	2	5,602	4	24,656	---	85	---	388	8	14,648	---	20,770	8	3.427
Lower Mississippi-----	12	7,857	---	490	---	1,352	---	865	6	15,608	---	11,979	---	199
Missouri--------------	14	44,255	---	11,999	1	2,753	1	6,360	15	26,057	21	45,819	3	12.162
Arkansas--------------	2	2,020	---	296	2	5,362	---	24	5	50,082	---	360	2	12.886
Red-------------------	---	2,061	---	923	---	2,003	1	250	6	16,037	---	11,768	---	880
West Gulf-------------	1	34,849	29	21,639	2	4,286	3	3.714	16	73,057	6	18,127	4	2.886
Colorado--------------	---	7	---	1,890	---	2,173	---	--------	---	741	---	240	---	100
Pacific---------------	---	8,931	1	2,929	63	186,785	6	27,930	---	23,397	10	33,404	---	5.638
Great Basin-----------	---	--------	---	--------	---	5,946	4	442	---	--------	---	12	---	4
Total	40	122,204	55	106,842	302	995,491	42	64,688	82	360,303	47	218,255	25	141,255

LOSS OF LIFE AND PROPERTY IN THE UNITED STATES FROM FLOODS

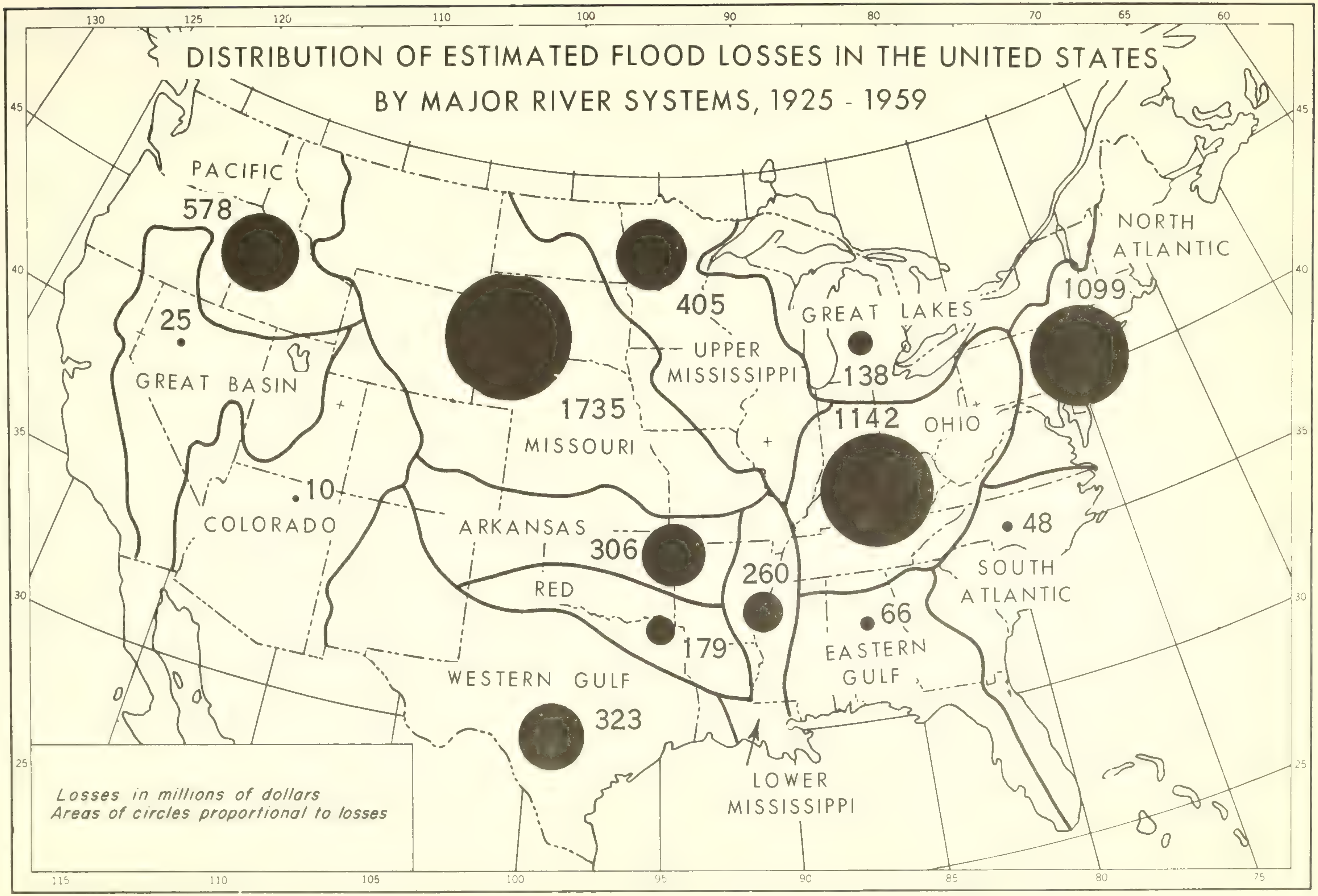
Property Losses in Thousands of Dollars
BY MONTHS AND YEARS, 1925-1959

	January		February		March		April		May		June	
Year	Property	Life	Property	Life	Property	Life	Property	Life	Property	Life	Property	Life
1925	3,614	2	141	0	74	0	–	0	65	6	3,980	14
1926	19	0	600	0	77	0	293	0	–	0	–	1
1927	2,626	8	1,867	0	407	0	283,207	232	7,566	95	1,125	0
1928	4	0	9	0	758	0	1,168	0	105	0	12,296	1
1929	122	0	2,964	0	21,947	47	1,937	0	15,668	5	10,268	5
1930	7,110	0	7	0	146	0	–	0	5,021	14	3,042	0
1931	–	0	30	0	572	0	–	0	8	0	13	0
1932	1,207	0	–	0	165	0	373	0	1,552	0	1,245	0
1933	308	0	87	0	2,008	1	2,709	4	10,785	4	2,650	4
1934	5,002	45	9	0	706	0	1,693	34	–	0	899	0
1935	297	0	1	0	2,177	4	2,698	5	16,903	40	62,702	122
1936	341	0	2,107	6	145,936	24	124,743	82	1,118	6	124	0
1937	411,481	65	7,691	75	62	0	4,524	0	2,627	0	5,429	0
1938	260	0	3,712	2	27,819	86	3,008	0	12,402	0	3,624	58
1939	3	0	1,657	4	738	0	1,982	0	37	0	4,271	1
1940	58	0	7,246	0	1,048	2	2,185	0	438	0	2,790	12
1941	3	0	516	0	820	2	1,970	4	3,081	7	12,718	12
1942	131	0	1,901	1	327	0	18,369	2	14,837	31	25,586	1
1943	3,579	4	69	5	7,183	8	10,161	5	130,478	57	41,771	0
1944	3	0	35	1	2,633	3	42,646	13	24,103	0	24,535	16
1945	146	0	5,882	0	33,202	14	54,054	36	23,530	0	28,866	8
1946	13,385	0	4,015	0	631	0	2	0	12,587	12	20,343	3
1947	486	3	96	0	1,458	0	56,037	2	18,032	1	193,134	48
1948	6,479	6	11,429	1	17,896	4	28,667	15	107,244	35	22,160	15
1949	9,772	6	5,073	2	11,676	3	9,261	2	18,195	10	32,861	17
1950	4,619	3	6,925	7	3,451	7	14,668	0	51,126	21	22,340	34
1951	884	0	5,823	2	7,264	1	18,287	2	15,166	6	5,383	8
1952	9,139	14	926	1	1,909	9	199,127	10	6,438	3	22,775	2
1953	8,575	1	368	0	10,675	2	–	0	41,656	5	53,572	29
1954	2,554	4	84	0	20	0	557	0	6,213	1	52,076	20
1955	–	0	1,620	4	17,372	17	2,653	4	9,231	2	3,825	1
1956	9,455	0	2,731	3	3,403	2	1,202	0	24,799	10	2,300	4
1957	61,383	15	29,750	2	–	0	106,130	18	44,182	13	101,696	32
1958	273	0	12,501	11	11,193	0	21,145	3	24,884	2	67,537	0
1959	95,601	8	2,448	0	2,031	6	427	0	7,181	8	890	0
Total	658,919	184	120,320	127	337,784	242	1,015,873	473	657,258	394	848,826	468
Average	18,826	5	3,438	4	9,651	7	29,025	14	18,779	11	24,252	13

Year	July		August		September		October		November		December		* Total	
1925	140	0	275	0	1,171	14	380	0	83	0	–	0	9,923	36
1926	55	0	7	0	7,729	6	12,699	6	135	0	1,854	3	23,468	16
1927	241	0	3,460	0	–	0	1,627	0	45,093	88	437	0	347,656	423
1928	13,339	0	9,272	3	4,047	5	–	0	3,567	6	46	0	44,611	15
1929	4,959	32	130	0	92	0	9,379	0	556	0	76	0	68,098	89
1930	244	0	251	0	–	0	29	0	–	0	–	0	15,850	14
1931	1,215	0	201	0	2	0	1	0	744	0	22	0	2,808	0
1932	1,627	0	763	0	2,666	11	335	0	3	0	359	0	10,295	11
1933	1,117	0	6,516	4	489	0	10	0	–	0	10,000	16	36,679	33
1934	178	0	322	9	84	0	28	0	1,287	0	154	0	10,362	88
1935	29,370	52	159	5	7,551	0	2,691	0	61	0	2,517	8	127,127	236
1936	2,428	20	205	0	5,046	4	378	0	118	0	5	0	282,549	142
1937	124	2	760	0	140	0	256	0	97	0	7,546	0	440,738	142
1938	10,373	9	232	8	39,641	17	3	0	5	0	19	0	101,098	180
1939	1,725	78	3,408	0	13	0	–	0	–	0	–	0	13,834	83
1940	5,314	0	18,853	40	2,135	6	88	0	95	0	217	0	40,467	60
1941	314	0	23	0	6,247	15	10,446	7	3,361	0	25	0	39,524	47
1942	13,064	17	267	0	3,234	0	5,678	2	–	0	15,113	14	98,507	68
1943	2,870	3	3,621	25	–	0	–	0	–	0	–	0	199,732	107
1944	3,198	0	928	0	1,708	0	108	0	–	0	1,182	0	101,079	33
1945	8,280	3	2,942	13	1,059	3	1,424	3	–	0	6,413	11	165,798	91
1946	1,636	4	1,148	0	7,346	0	1,965	0	1,314	0	6,441	0	70,813	28
1947	652	1	1,431	0	455	0	248	0	5	0	304	0	272,328	55
1948	17,550	2	1,144	0	590	0	–	0	3,553	0	13,247	4	229,959	82
1949	3,762	5	568	0	618	0	1,551	2	578	1	16	0	93,931	48
1950	19,224	6	1,687	0	3,718	4	5,562	3	6,638	3	36,092	5	176,050	93
1951	972,458	25	2,509	7	621	0	–	0	–	0	346	0	1,028,741	51
1952	3,858	9	296	0	9,376	6	–	0	30	0	190	0	254,064	54
1953	3,873	1	1,926	2	887	0	42	0	300	0	330	0	122,204	40
1954	2,218	2	6,606	3	3,170	8	33,341	17	–	0	3	0	106,842	55
1955	1,071	0	712,085	193	3,471	0	52,442	18	1,168	0	190,553	63	995,491	302
1956	5,849	15	11,671	4	–	0	1,892	0	137	3	1,249	1	64,688	42
1957	4,669	0	722	2	335	0	2,663	0	8,610	0	163	0	360,303	82
1958	42,779	29	18,631	1	14,560	0	2,336	1	2,416	0	–	0	218,255	47
1959	557	0	5,550	0	1,844	0	19,602	3	4,970	0	154	0	141,255	25
Total	1,180,332	315	818,569	319	130,045	108	167,204	62	84,924	101	295,073	125	6,315,127	2,918
Average	33,724	9	23,388	9	3,716	3	4,777	2	2,426	3	8,431	4	180,432	83

* Not adjusted to present price index

DISTRIBUTION OF ESTIMATED FLOOD LOSSES IN THE UNITED STATES BY MAJOR RIVER SYSTEMS, 1925 - 1959



LOSSES IN INDIVIDUAL SEVERE FLOODS IN THE UNITED STATES SINCE JULY 1902

Property Losses in Thousands of Dollars

Date	Location	Lives #	Property
May-June 1903	Kansas, Lower Missouri, and Upper Mississippi Rivers	100	$ 40,000
July 1908	Missouri River	---	9,339
	Upper Mississippi River	---	5,600
	Red River	---	16,200
July 1909	Missouri River east of Kansas City	---	5,500
March 1912	Lower Mississippi River	---	70,000
March 1913	Ohio River and tributaries	467	147,000
	Mississippi River	---	7,000
December 1913	Texas rivers	177	9,000
June 1915	Kansas River	---	5,950
August 1916	Rivers of the Carolinas	---	21,700
June 1921	Arkansas River in State of Colorado	120	25,000
September 1921	Texas rivers	215	19,000
April-May, 1922*	Upper Mississippi River	---	4,700
	Ohio Valley	---	4,000
	Lower Mississippi River	---	7,500
October 1923	Lower Arkansas, including the State of Oklahoma	---	15,000
March 1924	Potomac River	---	6,000
Spring of 1927	Mississippi Valley	313	284,118
August 1927	Arkansas River and tributaries	---	3,440
November 1927	New England rivers	88	45,578
June 1928	Ohio Valley	---	7,536
August 1928	South Atlantic drainage	---	4,400
September 1928	South Atlantic drainage	---	4,000
March-June 1929	East Gulf drainage	---	8,000
	Ohio Valley	---	16,500
	Missouri Valley	---	2,000
	Upper Mississippi Valley	---	3,600
	Lower Mississippi Valley	---	10,000
	Arkansas-White Valley	---	2,700
	Rivers in Texas	---	8,000
July 1929	Rivers in Central Kansas	---	4,000
October 1929	Rivers in Southeastern States	---	** 9,000
January 1930	White-Wabash Rivers	---	7,000
May 1930	Red River and tributaries	---	3,000
Sept.-Oct. 1932	Lower Rio Grande	---	2,500
March 1933	Ohio River	---	2,000
December 1933	Columbia River and tributaries	---	10,000
May 1935	Rivers in eastern Colorado	---	6,000
May-June 1935	Republican and Kansas Rivers	110	18,000
	Lower Missouri River	---	10,000
July 1935	Upper Susquehanna tributaries	52	26,000
December 1935	Houston, Texas, area	---	2,500
March-April 1936	Rivers in Eastern United States	107	270,000
July 1936	Rivers in central Texas	---	2,000
September 1936	Rivers in central and northern Texas	---	5,000
Jan.-Feb. 1937	Ohio and lower Mississippi River basins	137	417,685
December 1937	Sacramento Valley	---	7,100
March 1938	Streams in southern California	79	24,500
September 1938	Rivers in New England	---	37,000
July 1939	Licking and Kentucky Rivers	78	1,715
Feb.-Mar. 1940	Sacramento Valley	---	6,700
August 1940	Rivers in southern Virginia, the Carolinas, and eastern Tennessee	40	12,000
Oct.-Nov. 1941	Arkansas River Basin	---	8,500
April-June 1942	Upper Mississippi, Missouri, Arkansas, Red, and Trinity River Basins	---	44,350
May 1942	Delaware & Susquehanna River Basins	33	13,000
July 1942	Upper Allegheny River and Sennemahoning Creek Basins	15	10,000
Nov.-Dec. 1942	Willamette River	10	6,900
Dec.1942-Jan.1943	Ohio River	---	10,540
Apr.-June 1943	Maumee, Wabash, upper Mississippi, Missouri, White, and Arkansas River Basins	60	172,500
August 1943	Little Kanawha	23	1,300

LOSSES IN INDIVIDUAL SEVERE FLOODS IN THE UNITED STATES SINCE JULY 1902-Continued

Property Losses in Thousands of Dollars

Date	Location	Lives #	Property
April-June 1944	Upper Mississippi, Missouri, Arkansas, Red, lower Mississippi Basins and east Texas Streams	17	$ 82,000
Feb.-Mar. 1945	Ohio River	18	30,000
Feb.-Apr. 1945	Trinity and Sabine Rivers	---	9,000
Mar.-July 1945	Lower Mississippi River	---	9,500
July 1945	Lake Section of Rensselaer County, N. Y.	---	3,500
December 1945	Willamette River	9	6,000
January 1946	Cumberland River	---	3,925
	Tennessee River and tributaries	---	4,500
May-June 1946	Trinity River	---	4,150
September 1946	San Antonio and Nueces Rivers	9	6,050
December 1946	Willamette River	---	5,525
April 1947	Allegheny	---	4,319
May-July 1947	Rivers in Middle West in the lower Missouri and middle Mississippi River Basins	29	235,000
June 1947	East Creek at Rutland, Vt.	---	2,000
March 1948	Susquehanna River and tributaries	---	4,300
Apr.-May 1948	Red River of North and tributaries	---	18,700
May-June 1948	Columbia Basin	35	101,725
June-July 1948	Arkansas River and minor tributaries	---	14,500
December 1948	Housatonic River	---	4,200
April 1949	Rio Grande	---	3,300
May 1949	Trinity River	10	14,000
June 1949	Shenandoah and Potomac Rivers	11	8,850
Apr.-May 1950	Red River of North	9	33,000
June 1950	Central West Virginia	31	4,020
Nov.-Dec. 1950	Central Valleys of California and Western Nevada	---	23,000
February 1951	Western Washington	---	2,688
Mar.-Apr. 1951	Alabama-Georgia	---	3,292
April 1951	Upper Mississippi Basin	---	18,622
June-July 1951	Kansas-Missouri	28	935,224
Jan.-Feb. 1952	Ohio River	---	1,898
April 1952	Red River of the North-Upper Mississippi-Missouri River Basins	11	198,000
May 1952	Great Basin	---	8,373
September 1952	West Gulf of Mexico Drainage	---	7,762
January 1953	Northern California, Oregon, and Washington	---	5,971
March 1953	New England States	---	10,000
Apr.-May 1953	Louisiana-Texas	12	38,959
June 1953	Northwestern Iowa	14	32,950
June 1954	Middle Rio Grande and lower Pecos	16	19,079
October 1954	Pecos River in New Mexico	13	1,783
March 1955	Ohio Basin	15	14,396
August 1955	Hurricane floods in Northeast	187	714,079
December 1955	West Coast	61	154,532
May-June 1956	Columbia and Kootenai Rivers	---	14,025
Jan.-Feb. 1957	Streams in Southeastern Kentucky, Southwestern West Virginia, adjoining portions of Tennessee and Virginia	14	58,000
February 1957	Snake River and tributaries	---	20,500
Apr.-June 1957	Streams in Texas, Arkansas, Kansas, Louisiana, Missouri and Oklahoma	18	105,000
June-July 1957	Wabash River and tributaries	9	63,000
June 1958	White and Wabash Rivers	---	57,000
July 1958	Flash flood on East Nishnabotna River in Iowa	19	5,850
January 1959	Ohio River Basin	8	81,921
January 1959	Lake Erie Drainage in Ohio and New York	---	11,265

# Loss of life carried only where considerable.

FLOOD DAMAGE ESTIMATES BY STATES
1955-59

Flood Damages in Thousands of Dollars

	1955	1956	1957	1958	1959
Alabama	3,379	720	2,324	872	-
Alaska	-	Major flood in May	-	-	-
Arizona	226	-	-	-	100
Arkansas	61	255	27,938	6,202	3,090
California	165,767	8,745	13	33,063	4
Colorado	2,567	5,135	2,901	240	-
Connecticut	379,360	-	-	-	-
Delaware	117	-	-	-	-
District of Columbia	-	51	-	60	-
Florida	105	1,891	-	-	150
Georgia	1	212	1,068	323	-
Hawaii	No data available	-	-	400	-
Idaho	1,371	6,222	20,896	3	500
Illinois	102	1,026	1,206	17,970	1,506
Indiana	1,003	4,021	66,748	52,302	12,958
Iowa	35	51	1,543	7,508	128
Kansas	474	33	9,164	4,606	4,061
Kentucky	6,629	568	55,233	3,817	2,480
Louisiana	30	-	4,147	2,842	-
Maine	-	-	-	-	61
Maryland	5,450	837	-	40	-
Massachusetts	155,982	-	-	-	-
Michigan	-	1,278	-	-	-
Minnesota	-	11	9,128	17	50
Mississippi	3,132	1,270	2,693	13,826	280
Missouri	666	167	9,618	38,718	6,018
Montana	63	317	33	1	82
Nebraska	1,500	865	5,983	3,064	3,753
Nevada	7,398	237	-	-	-
New Hampshire	-	-	-	-	4,500
New Jersey	23,102	-	-	3	-
New Mexico	1,066	-	-	-	-
New York	30,072	1,089	166	42	5,667
North Carolina	625	831	788	3,201	506
North Dakota	2	-	100	-	28
Ohio	753	1,056	7	4,867	54,840
Oklahoma	977	-	35,665	169	8,907
Oregon	9,515	6,376	310	363	20
Pennsylvania	141,381	7,199	1,048	3,582	21,109
Rhode Island	28,830	-	-	-	-
South Carolina	74	-	60	680	125
South Dakota	11	10	3,969	-	-
Tennessee	977	279	5,118	128	-
Texas	5,165	3,715	78,881	18,101	2,886
Utah	226	210	169	10	4
Vermont	-	-	3	-	-
Virginia	10,695	-	139	-	28
Washington	1,165	6,472	1,664	50	4,914
West Virginia	5,187	3,185	11,052	1,170	709
Wisconsin	50	335	-	-	1,791
Wyoming	200	11	526	3	-
TOTAL	995,491	64,688	360,303	218,255	141,255

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

YEAR 1960

The most important floods during 1960 were the severe snowmelt floods that developed in the Midwest in the Upper Mississippi and Lower Missouri Basins during the latter part of March and early April. Record to near record crests were reported along several tributary streams in Iowa, Nebraska, Illinois, and Missouri and along the main stem of the Mississippi in the reach from Keithsburg, Ill., to Winfield, Mo.

Record flooding occurred during January on the Fox River in northern Illinois from ice jams. The crest of 36.9 feet at Dayton, Ill., was 24.9 feet above flood stage and the highest stage at this point since January 1952. Flooding reported elsewhere was mostly light.

The fourth highest flood of record occurred in the Eel River Basin in California during February. This was the first major rise in this basin since December 1955. An ice gorge formed in the Fox River below Dayton, Ill., causing the river to rise to more than 6 feet above flood stage at that point. This was 18 feet below the January crest, so no additional damage resulted.

Severe flooding occurred in the Missouri and Upper Mississippi Basins during March. A few records were broken, but in general, stages were slightly under those of record. The combined Missouri-Mississippi flows at St. Louis, Mo., was about 750,000 c.f.s. compared to the recent year record of 840,000 c.f.s. in 1944. Approximately 28,000 persons were evacuated and over one million acres flooded. Traffic was stopped on at least 75 major highways. One of the worst floods since September 1933 occurred on the Hillsborough River in North Tampa, Fla., around the middle of the month. About 8,000 persons were evacuated. Some record flooding occurred in the St. Lawrence drainage in western New York. The third highest flood of record occurred on French Creek in Pennsylvania. Floods reported elsewhere were light to moderate in severity.

Severe snowmelt floods developed in the Midwest in the Upper Mississippi and Lower Missouri Basins during the latter part of March and early April. Record crests were reported along several tributary streams in Iowa and Nebraska, and early in April along the main stem of the Mississippi from below Burlington, Iowa, to Quincy, Ill. The flooding along the Big Sioux at Akron, Iowa, was the greatest since the turn of the century. Near record to record stages were reported in streams in the Lake Erie and Ontario Drainages early in April. In the Atlantic Slope Drainage, the Connecticut River from Massachusetts northward reached the highest stage since 1938. Moderate to severe flooding was reported in streams in the East Gulf of Mexico Drainage, with crests ranging from the second to the fifth highest of record. Flooding reported elsewhere was mostly light to moderate.

The most important flooding during May occurred in the Upper Mississippi Basin in southern Minnesota. Severe flooding occurred on the Le Sueur River, with high water exceeding the previous record stages of April 1951. Flooding was also severe on the Minnesota River from Mankato downstream and on Sand Creek at Jordan, Minn. Considerable flooding occurred on the South Fork of the Solomon River in the Missouri Basin, with stages in the vicinity of Morland, Kans., the highest since 1934. A major rise occurred in streams in eastern Oklahoma. Flooding reported elsewhere was mostly light.

Significant flooding occurred during June in the West Gulf of Mexico Drainage towards the end of the month, due to excessive rains from a tropical storm. The Navidad River in Texas reached its highest stage since records began. A major flood occurred in northeast Refugio County, Tex., which has been reported as the highest in the history of that area. Several flash floods were reported in the Upper Mississippi, Missouri, and Ohio River Basins during June.

The most important flooding during July occurred in the west coast and central portions of Florida from heavy rain accompanying tropical storm "Brenda". Flooding was severe in the Tampa-Orlando area. Flooding reported elsewhere was mostly minor and widely scattered.

Severe flooding occurred in west-central Florida during August, for the second consecutive month. This flood occurred in connection with the heavy rain associated with tropical storm "Brenda". This was the worst storm to hit the west-central Florida coast since the hurricane of September 1950. Several million dollars damage occurred from the widespread flooding, resulting from the record-breaking rains. Flooding reported elsewhere was mostly minor, except for the flash floods in New Jersey, Virginia, West Virginia, Ohio, and Texas.

Most of the flooding in continental United States during September was confined to the Atlantic seaboard and occurred as a result of heavy rains accompanying hurricane "Donna". The most severe flooding occurred in southeastern New York in the small streams of the central and northern Catskills and in Green County. The heavy rains resulted in another flood on the Hillsborough River at Tampa, Fla. This was the third major flood in Tampa this year. The crests were about 1 foot below the flood of July-August 1960.

Significant flooding occurred during October in Texas. Flash floods resulted from torrential rains, with major rises on the Navidad, Lavaca, Guadalupe, Mission, and Nueces Rivers. Heavy damage resulted to property and crops and at least 12 persons were drowned. The highest flood of record since 1903 occurred on Medio Creek at Pettus, Tex., and probably the greatest flood of record on the Los Olmos. Floods reported elsewhere were mostly light.

Maximum floods of record occurred at several long-term gaging stations in the Willamette River basin in Oregon during November. Most of the flood damage that was experienced occurred on the creeks and small drainages of the larger Willamette tributary streams, heading in the Cascade Mountains and foothills below Albany, Oreg. Flooding reported elsewhere was mostly minor.

During December, flooding in continental United States was confined to southern Arkansas and eastern Texas. The only severe flooding reported was on small creeks in the Trinity and Brazos River Basins.

SOLAR RADIATION DATA

Average daily values (direct and diffuse) received
on a horizontal surface, tabulated in langleys.

YEAR 1960

Station	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Albuquerque, N. Mex.	310	390	580	664	700	710	690	670	554	426	338	268	525
Ames, Iowa	167	278	349	405	429	490	536	456	370	290	204	172	346
Annette, Alaska	60	132	203	296	470	429	425	367	240	81	47	34	232
Apalachicola, Fla.	290	386	425	421	512	615	475	540	472	414	324	274	429
Astoria, Oreg.	79	200	271	305	427	550	603	430	371	189	118	104	304
Atlanta, Ga.	201	305	345	431	504	488	462	451	367	324	272	218	364
Barrow, Alaska	†	---	275	550	424	726	446	225	113	46	#13	#	---
Bethel, Alaska	26	119	353	512	449	490	389	250	197	101	40	12	245
Bismarck, N. Dak.	159	252	376	488	610	559	655	508	454	294	167	124	387
Blue Hill Obs., Mass.	160	229	351	405	459	558	533	449	343	258	186	166	341
Boise, Idaho	---	---	340	501	585	730	664	609	494	305	158	154	---
Boston, Mass.	158	229	324	374	445	560	559	443	353	256	175	153	336
Brownsville, Texas	243	343	330	440	507	592	612	527	464	387	282	195	410
Canton Island, Pacific	590	644	---	617	632	---	---	---	638	646	634	627	---
Cape Hatteras, N. C.	256	362	455	586	655	648	589	549	501	362	303	254	460
Caribou, Me.	152	184	351	449	518	543	538	534	340	247	103	105	339
Charleston, S. C.	218	306	371	502	578	504	447	524	422	361	291	258	399
Cleveland, Ohio	98	143	297	332	408	526	527	427	299	230	133	111	294
Columbia, Mo.	164	257	414	448	593	558	559	539	467	316	236	187	395
Corvallis, Oreg.	----	----	275	395	456	675	688	525	406	234	128	92	---
Davis, Calif.	175	---	437	576	670	752	689	635	506	354	207	167	---
Dodge City, Kans.	259	277	435	564	632	663	599	580	506	353	309	215	449
El Paso, Texas	329	445	581	689	748	731	648	637	563	462	359	285	540
Ely, Nev.	249	316	506	598	703	722	617	636	503	377	238	234	475
Fairbanks, Alaska	17	71	267	361	531	508	469	290	165	78	45	5	234
Flaming Gorge, Utah	211	308	481	524	600	678	566	585	442	355	253	223	436
Ft. Worth, Texas	262	332	425	487	612	651	549	545	502	375	297	197	436
Fresno, Calif.	199	250	420	516	604	634	555	542	441	340	201	145	404
Gainesville, Fla.	306	359	487	592	636	570	501	541	458	---	332	323	---
Glasgow, Mont.	164	255	433	465	558	599	645	497	446	257	156	121	383
Grand Junction, Colo.	220	309	480	576	647	726	701	635	512	353	263	235	471
Great Falls, Mont.	132	216	408	443	493	593	617	487	408	248	151	102	358
Greensboro, N. C.	192	313	431	538	585	591	519	504	395	306	274	238	407
Griffin, Ga.	259	359	410	539	648	604	567	519	447	396	338	302	449
Hartford, Conn.	182	259	373	---	---	---	---	---	---	---	---	---	---
Indianapolis, Ind.	144	196	391	429	441	547	557	480	379	278	190	164	350
Inyokern, Calif.	322	404	618	728	821	877	823	800	652	516	358	335	605
Ithaca, N. Y.	112	196	398	338	---	---	528	426	323	230	128	116	---
Lake Charles, La.	221	306	349	472	576	594	535	418	461	327	270	196	394
Lander, Wyo.	229	353	513	543	642	668	587	628	460	333	240	227	452
East Lansing	115	222	392	335	413	527	581	448	349	244	143	138	326
Laramie, Wyo.	191	290	447	550	580	658	630	584	469	328	239	198	430
Las Vegas, Nev.	284	354	558	628	738	745	711	653	533	418	311	274	517
Lemont, Ill.	128	222	393	423	450	521	592	476	369	286	173	174	351
Lexington, Ky.	162	232	444	529	547	643	619	516	473	335	266	211	415
Little Rock, Ark.	186	262	376	512	583	623	623	572	480	328	277	201	419
Los Angeles, Calif. (U)	264	326	469	591	632	620	652	627	533	404	274	287	473
Los Angeles, Calif.	236	319	451	574	633	554	695	592	508	390	268	273	458
Madison, Wis.	---	281	414	430	463	554	632	501	379	279	167	173	---
Manhattan, Kans.	164	256	371	425	552	482	522	510	432	274	252	178	368
Matanuska, Alaska	31	90	---	312	402	500	376	312	171	107	34	11	---
Mauna Loa Obs., Hawaii	555	588	633	693	693	721	699	614	605	492	500	441	603
Medford, Oreg.	107	225	343	411	532	721	694	611	467	279	144	116	388
Miami, Fla.	372	399	503	518	556	489	538	531	379	391	353	316	445
Midland, Texas	285	380	442	579	619	494	568	550	510	394	303	243	447
Nashville, Tenn.	152	223	354	514	552	542	560	489	407	294	250	185	377
Newport, R. I.	169	256	351	383	467	533	548	426	371	281	198	172	346
New York, N. Y.	143	226	355	420	463	521	521	398	366	278	172	136	333
North Omaha, Neb.	193	309	393	465	559	456	627	523	433	304	222	184	389
Oak Ridge, Tenn.	164	230	328	473	532	521	533	415	378	269	223	187	354
Oklahoma City, Okla.	229	304	383	512	605	633	595	594	476	373	314	208	436
Page, Ariz.	295	383	549	615	691	707	714	636	516	378	300	238	502
Phoenix, Ariz.	297	392	551	634	721	714	640	591	542	379	307	279	504
Portland, Me.	180	261	358	405	512	604	588	495	391	265	164	172	366
Pullman, Wash.	145	--	--	454	540	717	722	526	461	266	135	101	---
Rapid City, S. Dak.	179	295	425	502	588	582	635	563	453	332	205	158	410
Riverside, Calif.	306	363	501	619	666	705	706	650	549	435	307	302	509
St. Cloud, Minn.	166	298	415	412	500	554	616	456	414	*42	150	114	345
Salt Lake City, Utah	181	270	427	522	664	737	688	625	496	361	216	211	450
San Antonio, Texas	208	316	355	330	517	603	574	491	458	317	225	195	382
Santa Maria, Calif.	239	313	491	---	710	663	657	624	507	424	297	279	---
Sault Ste. Marie, Mich.	120	248	424	368	445	532	606	511	328	196	104	110	333
Sayville, N. Y.	161	235	368	411	478	510	531	411	351	256	178	150	337
Seattle, Wash. (U. of W.)	70	144	228	389	389	490	582	335	302	176	94	68	272
Seattle-Tacoma, Wash.	83	178	280	391	451	550	630	362	300	188	112	79	300
Shreveport, La.	217	289	348	504	589	595	590	487	446	354	259	171	404
Spokane, Wash.	115	207	339	447	529	710	700	498	433	266	126	78	371
State College, Pa.	131	---	353	441	406	588	543	454	331	287	188	165	---
Stillwater, Okla.	191	279	364	454	546	548	640	562	480	401	---	---	---
Tampa, Fla.	329	350	468	553	576	554	473	473	425	421	381	316	443
Tucson, Ariz.	314	440	610	687	749	694	656	636	572	469	339	322	541
Washington, D. C.	159	272	392	506	444	570	519	475	366	270	209	201	365

Note Langley is the unit used to denote one gram calorie per square centimeter.
(U) Indicates Urban sites.
* 3 observations.
# Sun below horizon from November 18.
† Sun below horizon through January 14.

Chart I. Departure from Normal of Annual Temperature (°F) at Surface, 1960.

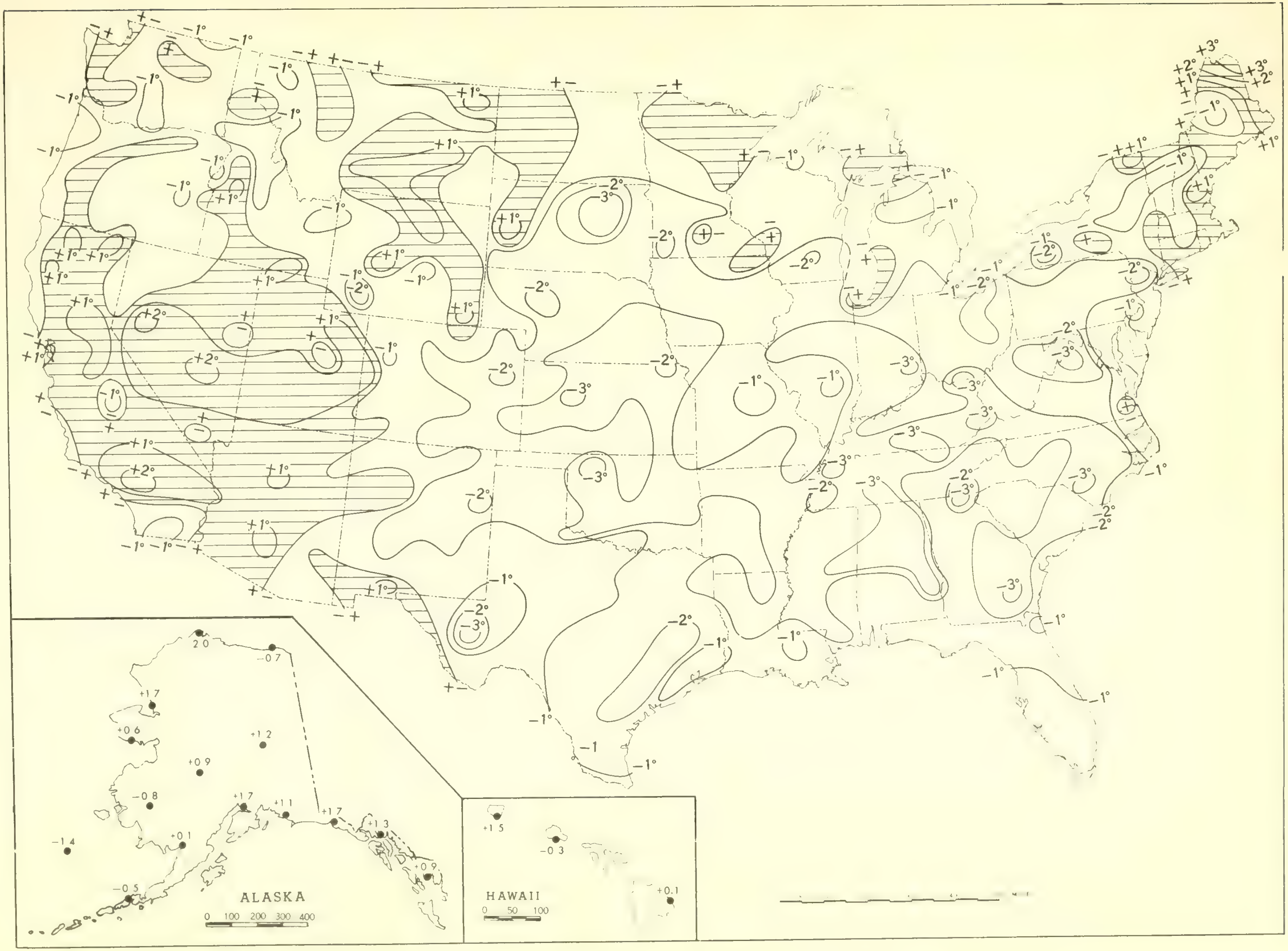


Chart II. Total Annual Precipitation (Inches), 1960.

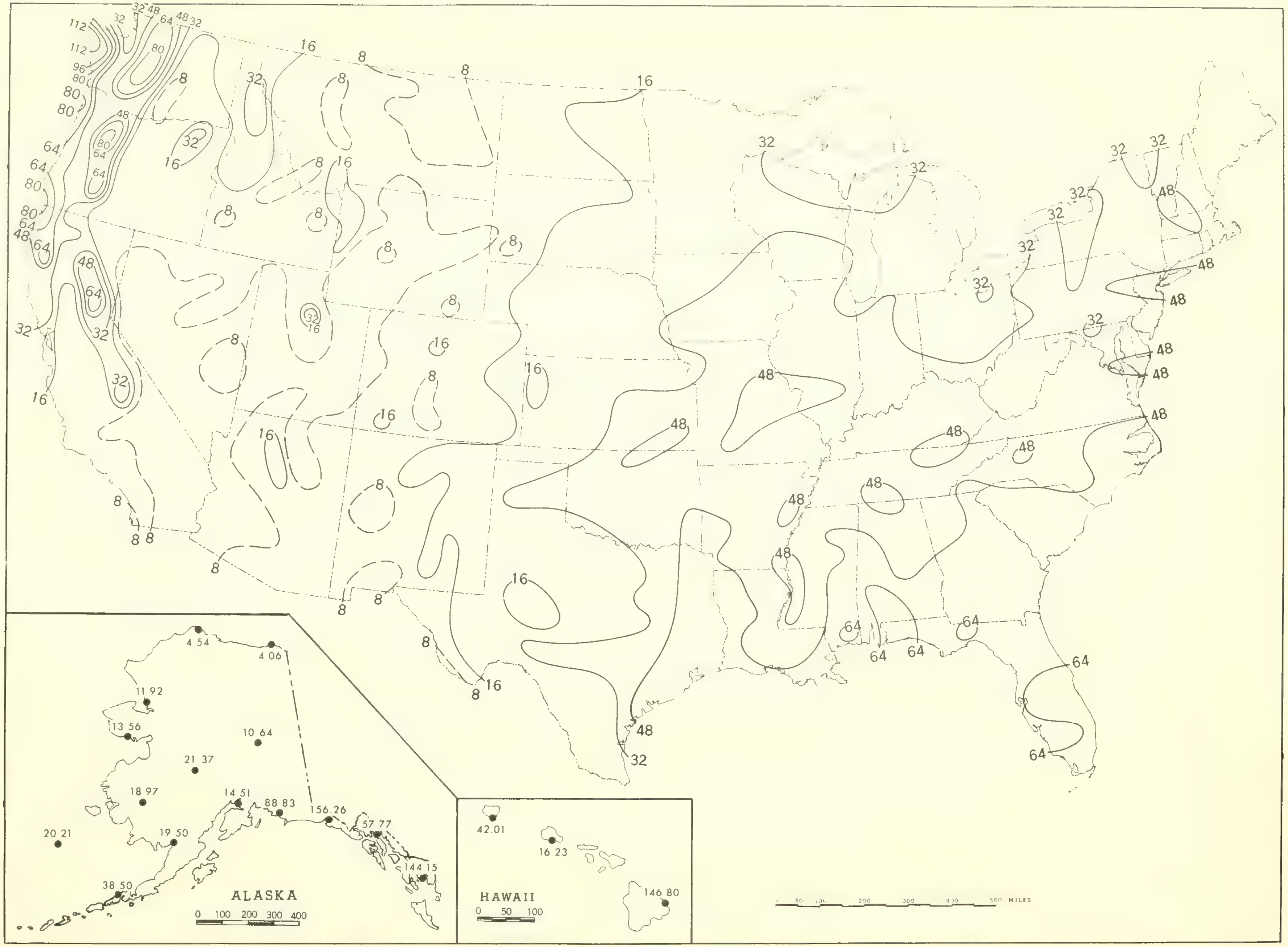


Chart III. Percentage of Normal Annual Precipitation, 1960.

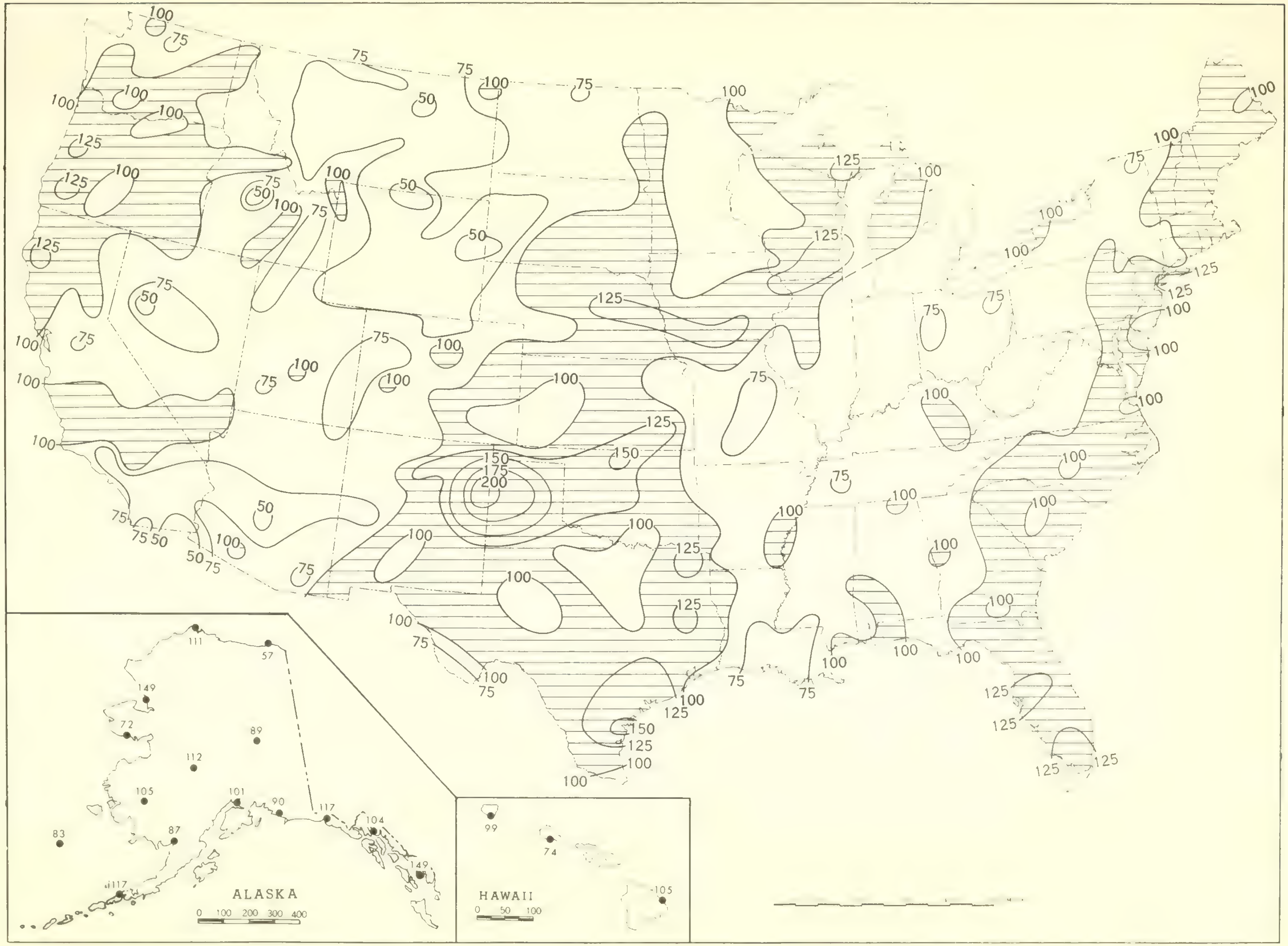


CHART IV. TRACKS OF TORNADOES, 1960.